

11
PUBLIC HEALTH ACT,

(11 & 12 Vict., Cap. 63.)

R E P O R T

TO THE

GENERAL BOARD OF HEALTH

ON A

PRELIMINARY INQUIRY

**INTO THE SEWERAGE, DRAINAGE, AND SUPPLY OF
WATER, AND THE SANITARY CONDITION
OF THE INHABITANTS**

OF THE TOWNSHIPS OF

NORTHOWRAM AND SOUTHOWRAM,

IN THE COUNTY OF YORK.

By **WILLIAM RANGER, Esq.,**

SUPERINTENDING INSPECTOR.



LONDON:

PRINTED BY W. CLOWES & SONS, STAMFORD STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

1850.

NOTIFICATION.

THE General Board of Health hereby give notice, in terms of section 9th of the Public Health Act, that within a period not exceeding one month from the date of the deposit hereof, written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Townships of NORTHOWRAM and SOUTHOWRAM, in the County of York, or with respect to any amendment to be proposed therein.

By order of the Board,

HENRY AUSTIN, *Secretary.*

*Gwydyr House, Whitehall,
5th July, 1850.*

PUBLIC HEALTH ACT (11 and 12 Vict., Cap. 63).

Report to the General Board of Health, on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Townships of NORTHOWRAM and SOUTHOWRAM, forming part of the Borough of Halifax, in the County of York. By WILLIAM RANGER, Esq., Superintending Inspector.

London, May 28, 1850.

MY LORDS AND GENTLEMEN,

A PETITION duly signed by one-tenth of the rated inhabitants of those portions of the townships of NORTHOWRAM and SOUTHOWRAM as are situate within the borough of Halifax, having been presented to the Board on the 28th of November, 1849, as follows:—

“ We, the undersigned inhabitants of the portions of the townships of Northowram and Southowram, in the county of York, which are situate within the borough of Halifax, in the same county (the same being a place having a known or defined boundary), and rated to the relief of the poor, and being one-tenth in number of the inhabitants rated to the relief of the poor of and within the same place, do hereby petition the General Board of Health to direct a Superintending Inspector to visit the said place, and to make inquiry, and examine with respect thereto, with a view to the application of the ‘ Public Health Act,’ according to the provisions thereof.”

Pursuant to your instructions to make such inquiry, I gave the notice required by the Act 11 and 12 Vict., cap. 63, proceeded to Halifax on the 21st day of May, and on the 22nd opened the inquiry at 10 A.M., in the Town Hall (which had been placed at my disposal by the worshipful the mayor).

I held sittings during the early part of that and the following days, devoting the latter portion of each day to a personal inspection of the various localities and houses inhabited by the industrial and poorer classes, concluding the inquiry on the 27th.

Evidence was adduced by John Crossley, Esq., Mayor; John Abbott, Esq., J. P., treasurer of the borough; G. Beaumont, Esq., J. P.; Mr. Alderman Booth; Mr. Alderman Dennis; Messrs. Bentley and Green, councillors; E. Akroyd, Esq., J. P.; Ely Bates, Esq.; W. Alexander, Esq., M.D.; George Haigh, Esq., high constable; Mr. Manks, surveyor of highways; Mr. Barker, auditor of the Union; J. W. Child, Esq.; Thomas Barraclough, Esq.; Messrs. S. Howarth, Priestly, Green, Phelon, Mann, Oakes, E. Ramsden, S. Rhodes; Thomas Spiers, inspector of police; J. Womersley, collector of rates; J. Noble, and R. Sutcliffe, assistant overseers; J. Jagger, assistant surveyor of highways; J. Best, grave-digger.

The parish of Halifax is one of the largest and most populous

parishes in the empire, containing 75,740 acres, being nearly twice as large in extent as the county of Rutland, and being nearly equal in extent to the county of Huntingdon; the population at the census 1841, was 133,353. The following tabular statement will show the rapid increase of population since 1801:—

In 1801 the population was	63,434
1811	73,415
1821	93,050
1831	109,899
1841	133,353

By which it will be observed that in 40 years the population has more than doubled itself, and the increase since 1841 will doubtless exceed 30,000.

The town of Halifax is situate near to the easterly extremity of the parish, and is in direct line of communication between the ports of Liverpool and Hull, being $14\frac{1}{2}$ miles S.W. of Leeds, and 22 miles N.E. of Manchester, 7 miles S.W. of Bradford, 7 miles N.N.W. of Huddersfield, 33 miles N.W. of Sheffield, 16 miles W. by N. of Wakefield, and 194 miles N.N.W. of London.

The parliamentary and the municipal boroughs are coextensive, and the boundaries are identical, and comprise the entire township and the populous portions of the adjoining townships of Northowram and Southowram, lying betwixt the township of Halifax and a line drawn from Lee Bridge to New Town, and thence southward to Bank Top, including Charles Town, Haley Hill, New Bank, Folly Hall, Southowram Bank, Pine Berry Hill, Waterside, &c.

“HALIFAX.—From the point at the north of the town at which the respective boundaries of the several townships of Halifax, Northowram, and Ovenden meet, westward along the boundary of the township of Halifax to the point at which the same meets the road, leading from a house called Shay, to Bank Top; hence along the said road from the Shay to Bank Top, to the point at which the same meets the road leading from Southowram to Northowram; hence along the said road from Southowram to Northowram to Godly Lane Bridge; hence in a straight line to the south eastern corner of New Town, on the Bradford road; hence in a straight line to the point first described.”

The township of Halifax has had several local Acts of Parliament for its local government. The Act now in force was passed in the fourth year of the reign of Geo. IV., and is intituled “An Act for Paving, Lighting, Cleansing, Watching and Improving the Township of Halifax, and for supplying the same with water.” The township of Halifax has, since 1823, been conducted by the trustees appointed under this Act.

In 1848 a Royal Charter was granted for the Incorporation of the *Parliamentary* Borough. In pursuance of this charter the trustees, under the local Acts, transferred by deed the several powers and properties vested in them under that Act to the

Mayor, Aldermen, and Burgesses of the Borough, and therefore the government is now in the hands of the Council.

The Northowram and Southowram portions of the borough are situate on the eastern suburbs of the town, and the northern portion is incorporated by charter as the North Ward, and the south portion forms part of the St. John's Ward.

PHYSICAL CHARACTER.—The situation of the district from which the petition was presented is described by Dr. W. Alexander thus :—

Northowram is situated on the E.N.E. of the town of Halifax, and Southowram on the S.E.; the former contains an area of 3,400 acres, and the latter 2,280.

GEOLOGY.—The stratification forms a variation of the upper group of the three members of the millstone grit and shale series, with an irregular surface and abrupt declivity to their western boundaries. A dislocation of the strata, the axis of which runs north and south for several thousand yards along the banks of the Hebble beck, places the townships on a different formation as to soil and sub-strata to that of Halifax, the dip being to the S.E.

The seams of coal are thin, seldom exceeding 22 inches; but there are large supplies of freestone, flagstone, and slate of superior quality. In Southowram the stone is of an arenaceous and also argillaceous character, often coloured with the peroxide of iron, cemented by aluminous matter, and capable of a fine lamination. In Northowram it is a compact freestone. The condensed alternating clay, shales, coal-bands, and sandstones, become extinct westward at the boundary line of Halifax.

The coal, in its three workable seams, is described by Dr. Alexander as almost invariably associated with pyrites and clay-iron ore in both townships, which give a character to many of the springs and water-courses.

The following schedule shows the vertical sections of the strata of Beacon Hill, &c. :—

SECTION OF STRATA.

No. 1. Shaft. Hipperholme.				No. 2. Shaft. Hipperholme.			
		Ft.	In.			Ft.	In.
1	Soil	1	0	1	Soil	1	0
2	Gravel	3	0	2	Gravel	7	0
3	Brown Rag	4	0	3	Ragstone	2	8
4	Shale	21	8	4	Shale	21	0
5	Rag	5	0	5	Rag	5	0
6	Bind	3	2	6	Bind	3	4
7	Rag	18	0	7	Rag	7	8
8	Cark	3	0	8	Freestone	3	0
9	Freestone	5	7	9	Cark	3	0
10	Rag	9	5	10	Stone	5	4
11	Freestone	4	0	11	Hard Rag	5	9
12	Shellystone	1	0				
13	Freestone	3	3			64	9
14	Shellystone (Rag)	1	0				
		<hr/>				<hr/>	
		82	4				

No. 1. Shaft. *Storr Hill.*

		Ft.	In.
1	Soil	2	0
2	Shale	25	0
3	Coal	0	10
4	Rock	2	0
5	Rag	22	0
6	Coal	1	3
7	Rock	11	0
8	Rag	15	0
		<hr/>	
		79	1

No. 2. Shaft. *Storr Hill.*

1	Soil	1	0
2	Clay	5	0
3	Shale	28	0
4	Rock	2	0
5	Rag	33	0
6	Coal	1	0
7	Rag	18	6
8	Shale	9	0
9	Coal	1	3
10	Shale	4	0
11	Coal	0	10
		<hr/>	
		103	7

No. 3. Shaft. *Storr Hill.*

1	Soil	2	0
2	Rag	3	0
3	Shale	16	0
		<hr/>	
		21	0

STRATA IN THE TUNNEL HILLS.

No. 3. Shaft. *Beacon Hill.*

1	Soil	1	0
2	Gravel or Shaley Earth	7	0
3	Shaley Rag	2	4
4	Shelly Stone	0	8
5	Soft Shale	7	7
6	Strong Blue Rag	2	2
7	Raggy White Shale	23	6
8	Strong Gritty Stone	9	0
9	Shale or Rag	19	6
10	Black Shale	30	9
11	Eight-and-forty Coal	0	2
12	Seat Earth, light coloured	2	0
13	Coal (Rubbish)	2	0
14	Dark coloured Seat Earth	3	0
15	Light-coloured Rag Stone	6	0
16	Dark-coloured Raggy Shale	8	0
17	Strong Black Shale	3	0
18	Dirt band, with Iron-stone	0	3
19	Black Shale, with Iron-stone Strings	6	0
20	Six-and-thirty Band Coal	0	6
21	Seat Earth, light-coloured	3	0
22	Hard Stone, ditto	2	0
23	Light-coloured Shale	2	0
24	Brown-coloured Stone, very hard	3	0

		Ft.	In.
25	Strong Black Shale	32	0
26	Is called, "Hard Bed Rag," it is dark with light-co- loured stripes in it	39	0
27	Black Shale: towards the bottom large bools of Iron- stone lie off the Shale	27	0
28	Called, "The Upper Bed Coal"	2	0
29	Called, "The Hard Bed Seat-stone," it is very hard	1	8
30	Seat Earth, light-coloured	3	0
31	Light-coloured Shale	12	0
32	Black Shivery Shale	22	0
33	Called, "The Middle-band Coal"	0	6
34	Seat Earth, light-coloured	2	0
35	Called, "The Middle Band Stone"	5	0
36	Black Shale	7	0
37	Brown nobly Shale, called "The Hard Bands"	2	3
38	Black Shale	1	0
39	Brown nobly Shale, called "The Hard Bands"	3	9
40	Black Shale	1	3
41	Brown Shale, called "The Hard Bands"	5	3
42	Strong Black Shale	9	0
43	Coal, called "The Lower Bed Coal"	1	4
44	Light-coloured Freestone. The depth of which is not known.		
		<hr/>	
		321	5

Note.—The strata run parallel to each other, and "dip" at an angle of $1\frac{1}{2}$ vertical to 36 horizontal.

No. 5. Shaft. *Storr Hill.*

1	Soil	0	9
2	Gravel	3	3
3	Shelly Brown Stone	2	0
4	Brown Soft Rag	3	0
5	Grey Shale	35	0
		<hr/>	
		44	0

No. 7. Shaft. *Storr Hill.*

1	Soil	1	0
2	Clay	6	0
3	Grey Shale	21	3
4	Coal	7	9
5	Black Shale	1	0
6	Raggy Stone	5	0
7	Grey Stone	2	6
8	Soft Grey Shaley Stone	7	6
9	Grey Shale	6	0
10	Coal	1	5
		<hr/>	
		52	5

“The water-bearing levels in Northowram and Southowram are of compact sandstone or clay. The springs do not rise from any dislocation of strata, but owing to interruptions of contiguity of the stratification on the sloping hill sides. The water is of better quality for all purposes in Halifax than in these two townships, because our soils are less soluble, of a loose, black, peaty character, beneath which lie the red gravel and silicious gritstone, whilst a clayey loam, shale, and pyritic earths predominate there. With the brook as the division line, we live on the middle member of the grit group, whilst they are on the upper series of that formation. But good water is to be found there.”

Elevated upwards of 500 feet above the level of the sea, the aqueous vapour in the air, Dr. Alexander stated, is of course variable with the seasons, and will average at least one per cent., or $\frac{3}{4}$ ths grains in each cubic foot.

The rain-gauge, from a long series of observations made by J. Waterhouse, Esq., F.R.S., to whom I am indebted for the following table furnished since the date of holding the inquiry, indicates a depth from 24 to 41.50 inches in the year:—

BULAR STATEMENT of the AMOUNT of RAIN collected in the Rain-gauge at Well-head, in the Township of Halifax, Yorkshire, from January, 1829 to December, 1849.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual Totals.
829	3.00 in Jan. and Feb.		.10	3.70	0.70	2.70	5.70	7.70	3.50	2.40	2.00	0.60	32.10
830	4.200 in Jan. and Feb.		1.20	3.00	4.80	5.10	3.90	2.60	5.60	4.10	4.50	2.50	41.50
831	1.50	3.20	3.50	2.10	1.50	1.70	4.00	3.60	3.20	4.50	6.50	2.70	38.00
832	1.10	1.20	1.90	2.35	2.20	5.30	1.60	4.63	0.54	2.73	3.30	4.20	30.05
833	0.25	4.55	1.50	3.50	1.40	6.10	1.45	3.95	2.35	2.60	1.50	5.16	32.51
834	6.94	2.45	3.05	1.37	0.74	2.12	6.21	1.65	2.60	1.42	2.82	1.25	32.62
835	3.30	4.80	3.50	2.20	2.50	1.80	0.84	1.20	2.94	2.79	2.80	0.50	29.17
836	2.80	2.46	2.85	2.48	0.34	3.65	2.90	1.30	3.10	2.80	6.10	4.70	35.48
837	3.75	3.50	1.28	1.30	1.25	2.20	3.25	2.00	2.70	5.10	3.95	4.60	34.88
838	1.15	2.20	2.70	1.90	3.70	3.75	2.80	3.84	1.10	4.70	2.90	1.50	32.24
839	2.95	2.00	3.10	0.55	0.28	4.65	4.40	3.25	2.76	2.30	4.75	2.90	35.89
840	5.70	1.85	0.35	1.05	4.10	2.66	3.80	3.05	4.60	1.30	4.50	0.42	33.38
841	3.50	1.10	1.70	0.82	3.35	3.70	2.68	3.52	3.12	5.95	3.80	3.30	36.54
842	2.20	0.90	4.10	0.40	2.25	1.68	3.85	1.05	2.30	2.25	3.85	1.90	26.73
843	4.30	2.80	1.20	3.55	3.35	2.60	3.10	2.50	0.65	7.30	4.00	0.35	35.70
844	1.80	3.20	3.75	0.30	0.13	2.30	2.02	3.15	2.25	2.40	2.50	0.20	24.00
845	1.60	0.65	2.55	1.60	2.95	2.50	4.00	5.60	1.90	4.30	1.85	5.80	35.30
846	3.25	0.90	2.00	5.50	0.85	2.15	1.90	5.10	0.90	4.50	2.30	1.10	27.45
847	2.10	2.12	1.50	2.50	3.90	2.10	0.80	1.97	2.10	3.20	2.75	4.40	29.40
848	1.40	5.35	4.12	1.80	1.10	4.00	1.91	4.60	3.82	4.60	1.95	2.35	37.00
849	5.12	1.25	1.30	2.12	1.60	1.40	3.90	3.80	4.10	3.40	2.40	2.90	33.29
Averages													

The Station about 540 feet above the sea. The Receiver 12 inches above the ground.
 May 27th, 1850.

JOHN WATERHOUSE.

Dr. Alexander, physician to the Halifax Infirmary, stated,—
 “Zymotic diseases are prevalent at Haley Hill, Range Bank, South side

New Bank, Charles Town, North side of Old Bank, Southowram Bank, Pineberry Hill, Water Side, Bayley Hall Bank, and Caddy Field.

POPULATION.—Assuming the respective populations of Northowram and Southowram to have of late years maintained the same ratio of increase as within the decennial period of the censuses of 1831-41, which I think very probable, the number of inhabitants in the first-named township will have reached, by the 30th of next month (June, 1850), 17,152; and, in the last-named district, 7,149. The increase of Northowram, indeed, much of which has doubtless arisen in the immediate vicinity of Halifax, of which it may be said to be the N.E. suburb, and the part which forms the subject of this inquiry, I found had slightly exceeded that of the town itself, amounting to 30 per cent. during the ten years just enumerated, a rate which would double its population in rather less than 28 years. The increase of the entire parish, for the same period, was $21\frac{1}{2}$ per cent., and that for Southowram $12\frac{1}{2}$ per cent. By ascertaining the excess of births over the number of deaths, I learn that the actual mean annual increase in Northowram of 478 persons has arisen from 206 births, and the accession of 272 strangers; whilst that for Southowram, of 91 persons, is as 85 and 6 respectively.

With respect to the precise populations of those parts of the two townships comprised within the boundaries of the borough, little more than an approximation to the truth can be arrived at; but from the enumerator's returns of the last census corrected for increase, and figures supplied to me of the number of inhabited houses assessed to the borough and watch-rates in those districts, I am of opinion that about 5,890 persons in the one case, and 2,616 in the other, making together 8,506, are directly concerned in the subject of this inquiry.

These portions may be said to partake of all the characteristics of an urban population, and being unprovided with any Local Improvement Act, have been sadly neglected in all sanitary requisites, and especially with respect to an adequate supply of water.

The Town Clerk stated:—

“ That the area of the parish amounts to 75,740 acres.

“ The township of Northowram is called the North Ward, and Southowram forms part of St. John's Ward. The area of the former is 3,400 acres, and of the latter 2,280.

“ The population of Northowram is in three distinct parts of the township, and at two miles distant from each other, the interests, consequently, are in a great measure distinct.

“ Southowram is also separated in its population, and the interest distinct.

“ The population of Northowram—

In 1821	amounted to	6,841
1831	„	10,184
1841	„	13,348

“ In Southowram it was—

In 1821	4,256
1831	5,751
1841	6,449

“ In that part of Northowram situate within the borough, it is estimated there are 1,211 houses, and in Southowram 597 houses.

NORTHOWRAM.

	Births.	Deaths.
For the Quarter ending 30 March, 1845	151	93
„ 30 June, „	141	58
„ 30 Sept., „	131	72
„ 31 Dec., „	136	102
Total	559	235
For the Quarter ended 31 March, 1846	157	100
„ 30 June, „	144	94
„ 30 Sept., „	159	85
„ 31 Dec, „	128	79
Total	588	358
For the Quarter ended 31 March, 1847	135	98
„ 30 June, „	138	82
„ 30 Sept., „	147	72
„ 31 Dec., „	117	83
Total	537	335
For the Quarter ended 31 March, 1848	93	90
„ 30 June, „	122	104
„ 30 Sept., „	145	81
„ 31 Dec., „	104	90
Total	464	365
For the Quarter ended 31 March, 1849	150	114
„ 30 June. „	147	89
„ 30 Sept., „	119	68
„ 31 Dec. „	135	103
Total	551	374

SOUTHOWRAM.

	Births.	Deaths.
For the Quarter ending 30 March, 1845	54	24
„ 30 June, „	58	32
„ 30 Sept. „	62	38
„ 31 Dec. „	57	49
Total	231	143
For the Quarter ended 31 March, 1846	66	42
„ 30 June, „	67	44
„ 30 Sept., „	69	30
„ 31 Dec., „	50	44
Total	252	160

		Births.	Deaths.
For the Quarter ended	31 March, 1847	70	49
„	30 June, „	60	34
„	30 Sept., „	52	36
„	31 Dec., „	53	36
Total		235	155
For the Quarter ended	31 March, 1848	57	39
„	30 June, „	65	48
„	30 Sept., „	67	37
„	31 Dec., „	57	31
Total		246	155
For the Quarter ended	31 March, 1849	70	47
„	30 June, „	63	39
„	30 Sept., „	54	35
„	31 Dec., „	65	54
Total		252	175

MORTALITY.—Dr. W. Alexander, physician, and resident, by whom a very close attention has long been given to sanitary science, in his evidence on the mortality stated:—

“ In estimating the registered mortality of the entire townships it must be borne in mind that a great part of the two districts is rural. Were those portions only which are comprehended in the borough admitted into the calculation, I feel satisfied that the mortuary returns would furnish a rate not very dissimilar to that of Halifax, viz., 1 death per annum in 42·1 of its inhabitants. The insalubrity of many of these quarters is universally admitted by the medical men and other well-informed parties.

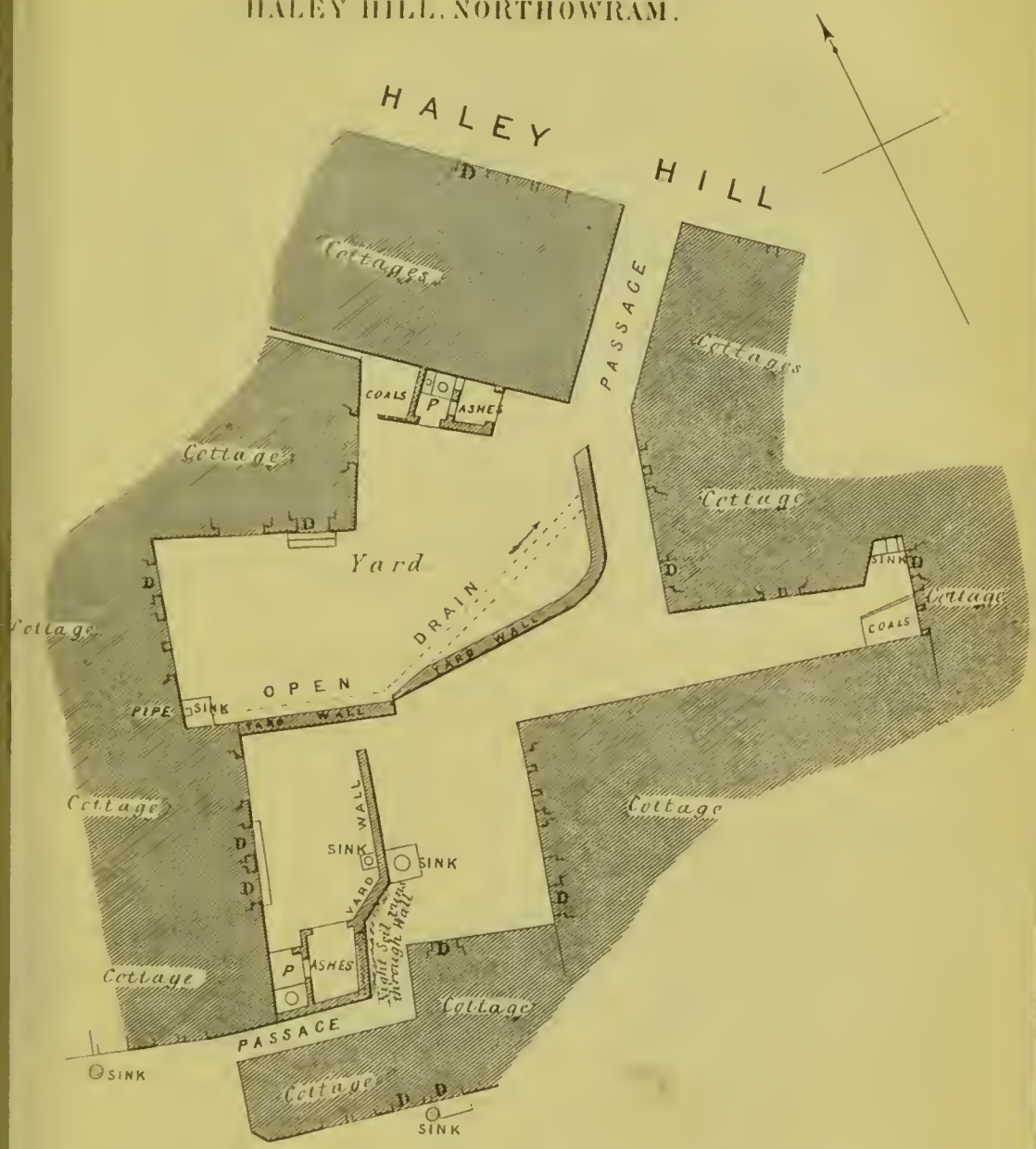
“ In the five years terminating with the 31st day of last December (1849), there were 1667 deaths recorded as occurring in Northowram, which, assuming my population figures to be correct, would give an annual average of 1 death in the entire township for every 47·2 of its inhabitants. The mean of the three years of 1840, 1841, and 1842, when by the census the actual population was known, supplied the same results, and would therefore seem to confirm the accuracy of my estimates. In like manner, and for the like series of five years, in Southowram township the deaths were 788, which would afford 1 death per annum for every 43·8, or, in round numbers, 44 of its people. In explanation of this relatively higher mortality of Southowram, it will be apparent, from the foregoing figures, that a larger proportion of its gross number of inhabitants live within the limits of the borough.

“ **EPIDEMIC DISEASES.**—That zymotic diseases are prevalent in those parts of the two townships contiguous to Halifax I can very safely testify. The localities chiefly visited by them are Haley-hill, Range-bank, the south side of New-bank, Charlestown, and the north side of the Old-bank, in Northowram; and Southowram-bank, Pinebury-hill, the Waterside, Bailey Hall-bank, and Caddy-field, in Southowram.

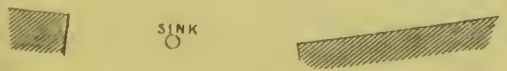
“ From the books at the Halifax Infirmary I have reason to know that sickness constantly prevails in these districts, and in the month of August, a year or two ago, I found it to amount to 6 per cent. of the inhabitants occupying that block of houses constituting the Caddy-field in Southowram. Last week, as one of the physicians to that institution, I had occasion to visit, in company with the house surgeon and apothecary, four cases of

NORTHOWRAM

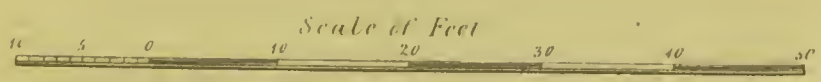
PLAN OF
Buildings and enclosed Yards behind
HALEY HILL, NORTHOWRAM.



STONY BATTER



D.D.D. Cottage Doors



NORTHOWRAM.



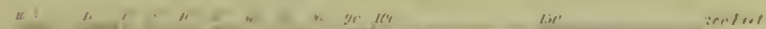
ELEVATION of STONY BATTER in NORTHOWRAM.
 showing the open Sewer towards its Outfall in OLD LANE or BOWLING DYKE.



PLAN of a portion of HALEY HILL in the NORTH WARD
 showing the Open Sewer in STONY BATTER

A to B Open Sewer or Main Drain
 B to C Sewer Open and saturated in a very filthy state.
 PP. Drains, & R Drains exposed to the Road, and Soil runs into the Road

Scale of Feet



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malignant scarlet fever in Garden-street, at the back of Dawson's mill. Two of these infants died, and a third, still dropsical, is not out of danger. The father, Richard Blakey, is a wool-comber, and has his comb-pot stove in the centre of his lodging-room. The locality in question was improved last autumn at the urgent instigation of the Sanitary Committee of the Guardians, whose labours under the Nuisance Act at that crisis, and previously in preparing for the outbreak, were universally approved; but its whole neighbourhood is in an unsatisfactory state.

AVERAGE AGE ATTAINED.—The average age attained in these two divisions of the townships, I have reason to think, would be about 50 years for the gentry, merchants, manufacturers, and their families; whilst a like calculation for the operative classes and tradesmen would yield about 26 years. Some time ago I found that one-fifth of the gross mortality of Halifax consisted of infants under six months old. I further ascertained that 1 in 8 of the total deaths arose from pulmonary consumption, 1 in 10 from old age, and 1 in every 22 deaths was from fever. In a return made for me by Mr. Peacock, late house surgeon to the infirmary and dispensary, fever stands at the head of his series of the prevalent diseases of the visiting district. In bad times this form of illness has been aggravated, owing probably to defective nutrition."

Dr. Alexander, in 1840, wrote thus: "During the registration year of 1840-41, in the two townships of Halifax and Skircoat, 582 deaths occurred under the following heads:—

	Number of Deaths in the Year.	Number of Deaths of Infants under 6 Months old.	Average Age of Death.
Professional men, gentry, merchants, and their families	18	..	60
Tradesmen and their families	130	20	25½
Artizans, labourers, and their families	434	83	25½

Of the 18 deaths among the gentry, manufacturers, and their families, the average age appears to have been 60 years; but Dr. Alexander, adds, in the following note:—

"I am inclined to believe it to be a maximum not attained by this class in ordinary years, for, besides several octogenarians, one old lady had reached her 96th year."

Of the 2nd and 3rd classes he says, the average age attained was found to be much the same in both—about 25½ years. In the latter instance, however, he considers the average to have been much raised by an unusual number of deaths at advanced ages among weavers.

It appears, from the table given, that the deaths of infants under half a year old, constitute nearly a fifth of the total mortality of the year.

In 1840, Dr. Alexander, in directing attention to the advantages of the Horley Green mineral water, gave the following topographical sketch of the nature and character of some of the diseases

occurring within the visiting district of the infirmary. At the head of this list stands fever, of which there appears to have been 155 cases. Of these 29 occurred around the parish church and Southowram-bank. Of typhus there were 21 cases, of which 6 were in the district surrounding the parish church, 3 in Crossfield, 3 at Pineberry-hill, 3 at Newtown, and 4 at King-cross; the three last places being situated on the rising ground or hilly ridges.

Of pulmonary *consumption* there were 28 cases, of which 6 occurred in Crossfield, 3 in Haley-hill, 3 in Park-street.

The REGISTERED DEATHS in that part of NORTHOWRAM comprised within the precincts of the Borough of HALIFAX, from May 1st, 1849, to April 30, 1850, inclusive.

CAUSES OF DEATH.	AGE.			Total.
	0 to 15	15 to 60	60 and upwards	
ALL CAUSES	66	41	3	110
SPECIFIED CAUSES				
I.—Zymotic Diseases	13	4	..	17
SPORADIC DISEASES:—				
II.—Dropsy, Cancer, and other Diseases of uncertain or variable seat	1	2	..	3
III.—Tubercular Diseases	9	15	1	25
IV.—Diseases of the Brain, Spinal Marrow, Nerves, and Senses	19	5	..	24
V.—Diseases of the Heart and Blood-vessels	1	2	..	3
VI.—Diseases of the Lungs, and of the other Organs of Respiration	6	7	2	15
VII.—Diseases of the Stomach, Liver, and other Organs of Digestion	13	3	..	16
VIII.—Diseases of the Kidneys, &c. . . . .	..	1	..	1
IX.—Childbirth, Diseases of the Uterus, &c. . . . .	..	1	..	1
XIII.—Premature Birth and Debility	2	..	..	2
XIV.—Atrophy	1	..	..	1
XV.—Age . . . . .	..	1	..	1
XVII.—Violence, Privation, Cold, & Intemperance	1	..	..	1
I.—Scarlatina	4	1	..	5
Hooping Cough	4	..	..	4
Diarrhœa	3	..	..	3
Dysentery	1	..	..	1
Cholera, Asiatic . . . . .	..	1	..	1
Remittent Fever	1	..	..	1
Typhus . . . . .	..	1	..	1
Metria or Puerperal Fever . . . . .	..	1	..	1
II.—Dropsy . . . . .	..	2	..	2
Abscess	1	..	..	1
III.—Tabes Mesenterica	2	1	..	3
Phthisis (or Consumption)	4	14	1	19
Hydrocephalus	3	..	..	3
IV.—Cephalitis . . . . .	..	1	..	1
Paralysis . . . . .	..	1	..	1
Convulsions	19	..	..	19
Disease of Brain, &c. . . . .	..	3	..	3
V.—Disease of Heart	1	2	..	3
VI.—Bronchitis	1	4	1	6
Pneumonia	3	1	..	4
Asthma . . . . .	..	1	1	2
Disease of Lungs, &c	2	1	..	3

CAUSES OF DEATH.	AGE.			Total.
	0 to 15	15 to 60	60 and upwards	
VII.—Teething	8	..	..	8
Peritonitis . . . . .	..	2	..	2
Ulceration (of Intestines, &c.)	5	..	..	5
Disease of Liver . . . . .	..	1	..	1
VIII.—Disease of Prostate . . . . .	..	1	..	1
IX.—Disease of Uterus, &c. . . . .	..	1	..	1
XVII.—Burns and Scalds	1	..	..	1

The Year's Deaths in the Borough part	110
Ditto, in the Rural part	232
Total Deaths entire Towuship	342
Estimated Population of the Borough part, June 30, 1850	5,890
Estimated Population of the Rural part, June 30, 1850	11,262
Total Population of Township	17,152

The REGISTERED DEATHS in that part of SOUTHOWRAM comprised within the Borough of HALIFAX, from the 1st of May, 1849, to the 30th April, 1850, inclusive.

CAUSES OF DEATH.	AGE.			Total.
	0 to 15	15 to 60	60 and upwards	
ALL CAUSES	71	19	3	93
SPECIFIED CAUSES	68	19	3	90
I.—Zymotic Diseases	17	2	..	19
SPORADIC DISEASES:—				
II.—Dropsy, Cancer, and other Diseases of uncertain or variable seat . . . . .	..	1	..	1
III.—Tubercular Diseases	15	10	..	25
IV.—Diseases of the Brain, Spinal Marrow, Nerves, and Senses	14	1	1	16
VI.—Diseases of the Lungs, and of the other Organs of Respiration	4	..	..	4
VII.—Diseases of the Stomach, Liver, and other Organs of Digestion	7	1	..	8
XI.—Diseases of the Skin, Cellular Tissue, &c. XIII.—Premature Birth and Debility	11	..	..	11
XIV.—Atrophy . . . . .	..	1	..	1
XV.—Age . . . . .	..	..	2	2
XVII.—Violence, Privation, Cold, & Intemperance	2	2	..	4
I.—Scarlatina	7	..	..	7
Hooping Cough	6	..	..	6
Croup	1	..	..	1
Diarrhœa	1	..	..	1
Cholera, Asiatic . . . . .	..	1	..	1
Remittent Fever	1	..	..	1
Metria or Puerperal Fever . . . . .	..	1	..	1
Syphilis	1	..	..	1

CAUSES OF DEATH.	AGE.			Total.
	0 to 15	15 to 60	60 and upwards	
II.—Dropsy . . . . .	..	1	..	1
III.—Tabes Mesenterica	3	..	..	3
Phthisis (or Consumption)	4	10	..	14
Hydrocephalus	8	..	..	8
IV.—Apoplexy . . . . .	..	1	..	1
Epilepsy . . . . .	..	..	1	1
Convulsions	14	..	..	14
VI.—Pneumonia	4	..	..	4
VII.—Teething	4	..	..	4
Gastritis . . . . .	..	1	..	1
Ascites	1	..	..	1
Ulceration (of Intestines, &c.)	2	..	..	2
XI.—Disease of Skin, &c.	1	..	..	1
XVII.—Drowning . . . . .	..	1	..	1
Other violence . . . . .	..	1	..	1
Causes not specified.	2	..	..	2

The Year's Deaths in the Borough part 93
 Ditto, in the Rural part 83

Total Deaths entire Township 176

Estimated Population of the Borough part 2,666
 Ditto of the Rural part 4,483

Total Population of Township 7,149

RETURN from the 21st August to 9th October, 1849, of CASES attended by the
 MEDICAL OFFICERS of the POOR LAW BOARD.

General Schedule for Cases of Premonitory Diarrhœa and Cholera, in the Borough
 parts of Northowram and Southowram.

Premonitory Cases since last Report.		Cholera.			Premonitory passing into Cholera.,
Simple Diarrhœa.	Rice Water Purging.	Cases.	Deaths.	Under Treatment.	
120	14	6	1	7	D. 1

WM. ALEXANDER, M.D.,

Late Superintendent of the Medical Staff,
 Poor Law Guardians.

NOXIOUS INFLUENCES.—With regard to the extent to which noxious influences operate, Dr. Alexander observes, that the excess of mortality in the poorer districts was due to a combination of causes. In Northowram and Southowram, there are but three classes of men whose daily occupations are positively detrimental to health and longevity, viz., stone-masons and quarrymen, flag-facers, and combers; and in all these the habits of the parties must be taken into consideration in estimating the injury

sustained. The rest of any excess of sickness, over and above what it might become under more favourable circumstances, may very fairly be ascribed to defective sanitary arrangements.

A large proportion of the combers live in the municipal part of Northowram and the practice of following their work at home, and having a *comb-pot* in the midst of their chamber is injurious to health, and extends the mischief to their families upon being driven for want of space to sleep below in their sitting-room or cellar, where washing, cooking, and every other domestic work is performed, and water and provisions kept.

In the construction of the houses the dimensions of bed-rooms and the means of ventilating them ought to be one of the first considerations, whereas they are comparatively little thought of. Mr. Austin, in speaking of ventilation, has pertinently observed:—

“This subject has been so mystified, by variety of treatment and repeated failure, and so complicated by costly apparatus, that the attainment of fresh air is almost looked upon as an impossibility, or a thing to be obtained only at so much per cubic foot.”

It is difficult to conceive tenements constructed on a worse principle than those erected and in building in the two townships, or for the builders to have adopted plans whereby the rooms could be rendered worse or more insalubrious. The consequence is, the occupants are doomed to breathe vitiated air during more than a third of their lives: to adopt the words of Sir James Clark:—

“And thus the period of repose, which is necessary for the renovation of mental and bodily vigour, becomes a source of disease. Sleep, under such circumstances, is less refreshing if not disturbed, and instead of being followed by renovated strength and activity is succeeded by a degree of heaviness and languor, which is not overcome till the person has been some time in purer air.”

Nor is this the only evil arising from sleeping in ill-ventilated apartments, and residing in tenements of the description that prevail in the district under consideration. When the fact is considered that the blood undergoes most important changes in its circulation through the lungs by means of the air breathed, and that these vital changes can only be effected by the respiration of *pure* air it will readily be understood how the healthy functions of the lungs must be impeded by inhaling for many successive hours the vitiated air of the rooms, and the health deteriorated if not actually destroyed.

Dr. Farre and Mr. Granger, in their joint Report on Metropolitan Workhouses, observed:—

“It is in strict accordance with the results of experience to state that of all the circumstances affecting the health and lives of human beings, and especially when collected in numbers together, by far the most potential are those relating to the quality of the atmosphere in which they habitually live. To breathe a pure air [say the reporters] is more essential than to have a proper supply of food, fuel, and clothing; for, although these last

are, as they are termed, the necessaries of life, it is less difficult for people to maintain a certain degree of bodily health on scanty food and with imperfect means of warmth, than it is for them to escape disease when they are immersed in a deteriorated atmosphere."

The facts adduced during the inquiry, and a personal inspection of tenements, combined with the use made of the rooms day and night, necessarily suggest the vast importance of maintaining the purity of the air. By way of exemplification I quote the following extract from the Report of Dr. Farre and Mr. Granger, showing that a neglect of ventilation leads to a noxious atmospheric deterioration when any number of persons are collected together:—

"It is well known, in a general way, that this is caused by the exhalations or secretions of the animal body, and essentially by those of the lungs and skin; and if most persons were asked what was the most important element of the contaminated air of a crowded apartment, many, probably the majority, would reply, carbonic acid; but this, in reference to the generation of the disease, is an error. Atmospheric deterioration, whether we speak of the air of cities or of the open country, depends on other matters than carbonic acid gas, though this in itself is at all times, when in any excess above the natural standard, injurious to health, and if sufficiently concentrated a deadly poison. In the vapour which passes out of the lungs in the act of expiration or breath, as it is called, besides carbonic acid, there is a highly noxious animal matter, which, if it be collected by the condensation of the expired vapour, and kept for a few days, becomes decomposed, and emits a strong putrid odour; and so again in the case of the skin, there is, without a moment's cessation, emitted a vapour, which, though it be ordinarily invisible, can be made palpable to the senses, and which like the vapour from the lungs contains effete, that is decayed, animal matter. That these animal substances are most noxious to the living body will be immediately inferred from the fact that one of the express and most important offices of the lungs and skin is to carry them out of the body. What then, it must be asked, but the most injurious effects can be expected from the re-introduction into the system, by the way of respiration, of substances for the discharge of which such careful provision is made by nature; which are indeed the very excreta of the animal frame? There is [add the reporters] in fact, no doubt, that although the air of cities does contain, as has been experimentally proved, a somewhat larger proportion of carbonic acid than that of the country, the generation of disease and especially of fever, that infallible gauge of a contaminated atmosphere, depends on the admixture of some such subtle organic matters as those above noticed.

"There is a further point connected with this discharge of animal matter into the external atmosphere meriting notice. And it is this: such substances are in an especial manner taken up and retained by articles of clothing, and not less so by blankets, bedding, &c.; a circumstance proved by the well-known fact, that medical men and others, after visiting the wretched abodes of the poor, retain even for two or three days in their clothes the peculiar odour of the atmosphere of such localities. It will be perceived, that although by freely opening the windows of the sleeping rooms in the day time, the carbonic acid gas generated during the night may be carried off, it is not possible by such means to dislodge the poisonous organic matter of the respired air clinging to the bedding and even to the floors and walls."

Dr. Alexander observed:—

"The cottage tenements are often constructed without regard to aspect

or size; and the principle of building back to back very generally prevails in Charlestown and Caddyfield. Cellar dwellings are not uncommon; and in some instances foetid smells have exuded through the damp floors which are said to 'come off the coal.'

A personal inspection of various tenements, not only confirmed the statement of Dr. Alexander, but established the additional fact that faecal matter had permeated the walls several feet in height, and the beds were in contact. The evils to which the occupiers were exposed formed a subject of loud and very just complaint.

Although in many instances without suffering from any formal disease, they are subject to various complaints which embitter their life, and render them much less capable of bodily and mental exertion than they would be if placed in a situation more congenial to their constitution; so long as their dwellings are allowed to remain in their present condition, they cannot but possess an inferior degree of vitality, and if attacked by disease, they sink more rapidly under it than the inhabitants of healthy tenements.

E. Akroyd, Esq., J. P., and senior partner of the firm contributing about one-fourth of the rates of the North Ward, stated—

"Houses are erected in the vicinage of the mills by small capitalists, upon speculation, without due regard to the comforts or health, and the evil becomes aggravated every year. Cellars are let for habitation, and he had found a family tenanted a cellar constantly ill, but since their removal they have been restored to the blessing of health."

The Mayor (John Crossley, Esq.), stated—

"As a member of the Sanitary Committee, upon attempting to do anything towards improving the dwellings of the working people, they were met and frustrated at every corner; as a consequence all efforts had proved abortive, and the Committee disgusted. That he, at first, had doubted the success of the application of the provisions of the Act, but from the explanation given (by the Inspector), believes it will be a great boon to the district, and if the Sanitary Committee can have adequate powers to carry out the measure, it cannot but be a great blessing to the people."

Mr. Barker, Auditor to the Union, observed—

"He was well acquainted with the district, and had visited every part of Southowram during the past week.

"That two proprietors had provided washhouses to 12 tenements, but all other persons (occupiers of about 140 tenements), are obliged to wash, cook, sit, and keep their provisions and pittance of water in one and the same room."

Mr. J. Priestly, resident in the North Ward, and owner of about 20 houses, was called and examined by the Town Clerk—

"His residence is about 500 yards distant from the Range-bank. The present price of houses is low. A row of houses belonging to a building society cost 1,600*l.* but recently sold for 800*l.*, or one moiety of the first cost. Considers the depreciation entirely due to the want of sanitary appliances."

It is fortunate for the several thousands who are engaged in the

mills and sheds, that their employment takes them from the *locale* of the impurities that are allowed to abound in the vicinage and close proximity to their residences. Truth requires I should state that a great desire is manifested to secure purity of atmosphere on the part of their employers, who are fully sensible of the great advantages derivable from regarding the healthiness of their sheds; and a most conclusive evidence of the effect was apparent in the countenance of their people.

COMMON LODGING-HOUSES. — The Town Council have had their attention directed to the necessity for regulating these places, and in furtherance thereof, passed, in December 1849, the following bye-law:—

“ That any person keeping a lodging-house within the said borough for the reception of pedlars, vagrants, and itinerant mendicants, or for the reception of other persons for a shorter period than one whole week, shall forthwith, or previously to the use thereof, cause such lodging-house to be registered at the Town-Clerk’s office, and afterwards, at some time during the first whole week in the month of January in each year, shall cause such registration to be renewed; and shall permit the surveyor or superintendent of police of the said borough, or such other person to be appointed by the Town Council for that purpose, to inspect the state of such lodging-house as aforesaid, and shall observe and perform all rules and regulations required of him by the Sanitary Committee of the Town Council, in relation to the cleanliness and ventilation of such lodging-house, and to the health of the inmates thereof.

“ And for the more effectually providing against disease, and for the preservation and security of the health of the inhabitants in the neighbourhood of such lodging-house, it shall be lawful for the Town Council from time to time, as occasion may require, to fix the number and size of beds, and the number, description, and sex of inmates to be received in such lodging-house, and the several rooms thereof, according to the size thereof and the accommodation offered (reference being had to the number of persons which form the family, servants, or attendants of the keeper of such lodging-house).

“ And to frame such rules and regulations as may be requisite for prohibiting males and females, not being man and wife, from being lodged or sleeping in the same apartment; and for effectually ventilating such lodging-house, and cleansing the several apartments thereof at least twice a-week; a copy of which rules and regulations shall always be kept posted up in some conspicuous part of the said lodging-house, signed by the Town-Clerk.

“ Any person who shall *not obey* such rules and regulations as aforesaid, or shall take into any lodging-house a number exceeding the number assigned to it by the said rules and regulations, or who *shall not* at all times keep exposed to view in some conspicuous place within the said lodging-house, the rules and regulations made by the Town Council in reference to the said house (or shall permit any person to lodge therein and be confined to his bed by illness for the space of 48 hours, without giving notice to, and requiring the attendance of some duly qualified medical officer), or who shall continue to receive lodgers as aforesaid, after such medical officer shall have certified that danger is to be apprehended, from fever or some other infectious disease, by reason of the illness of such person as aforesaid.

“ Or who *shall not* cleanse out and whitewash such lodging-house with quick-lime, at least once in three months, 1st to 10th January, April, July, and October, or shall not effectually cleanse the several apartments thereof at least twice a-week.

“ Or who shall not obey the instructions of any surveyor, superintendent of police of the said borough, or such other person to be appointed by the Town Council for that purpose, given in pursuance thereof, for disinfecting, cleansing, and purifying such lodging-house as aforesaid.

“ Or who shall obstruct or prevent such surveyor, superintendent of police, or such other person as aforesaid from carrying out any order of the mayor or justices, for disinfecting, purifying, and cleansing such premises as aforesaid.

“ Or shall not give access to such premises, at all times, to any surveyor, superintendent of police, or such other persons to be appointed by the Town Council for that purpose, acting under the orders of the mayor or such justices as aforesaid.

“ Or who shall keep such lodging-house without being duly registered as aforesaid.

“ Every person so respectively offending, shall, for any such offence, forfeit and pay the fine or sum of five shillings; and for a second offence, alleged and proved as such, and not committed on the same day as such first offence, shall forfeit and pay the fine or sum of ten shillings; and for every offence being subsequent to a second offence, and alleged and proved as such, and not committed on the same day as any prior offence, shall forfeit and pay the sum of twenty shillings.

“ Provided always, that no person receiving, at the request of a duly licensed victualler, any person to lodge for a less period than a week, shall be deemed to be within the meaning of this bye-law.”

The following abstract shows the number of lodging-houses in the district from which the petition was presented:—

LIST OF COMMON LODGING HOUSES in the Townships of Southowram and Northowram, included in the Borough of Halifax.

NAMES.	Number of House.	Number of Rooms.	Number of Beds.	Ward.	Township.	If Supplied with Water.	Privy or Not.	Greatest Number of Lodgers taken in at one time.	Sex.	REMARKS.
Nathan Bell . . .	52	2	7	St. John's.	Southowram.	No.	No.	12	Both.	
Thomas Evans . . .	None	2	3	“	“	“	“	6	“	
Edmund Greenwood	44	3	7	“	“	“	“	14	“	Sexes sleep together indiscriminately.
Joseph Smith . . .	51	3	6	“	“	“	“	10	“	
Magdalen Brindley . .	None	2	3	“	“	“	Yes.	4	“	“
John Moran	3	2	3	“	“	“	No.	17	“	“
William Gooder . .	None	4	5	North Ward.	Northowram.	“	Yes.	10	Males only.	“

The Board will be aware, that notwithstanding the efforts made by the Town Council to regulate the common lodging-houses by means of a bye-law, a primary object remains to be accomplished, viz, the appointment of a medical officer, with clearly defined duties, and the subservience of lodging-house keepers thereto.

ARRANGEMENTS EXTERNAL TO THE RESIDENCES OF THE INDUSTRIAL POPULATION.—If it is requisite to secure proper ventilation within human dwellings, it is no less necessary that the air around them should be pure and salubrious. The best internal arrangements for ventilation cannot possibly change the

character of the external air, nor prevent the injurious effects to which the inhabitants are at present exposed,—viz. a humid vitiated atmosphere deteriorating the health.

The Council have passed a bye-law on the obstruction of drains, &c. ; but the Board will be aware that such bye-law is not adequate for creating a system of sewerage and house-drains, and, therefore, in the districts forming the subject of this Report, it is inoperative, although it provides—

“That if the owner or occupier of any house, land, or tenement within the said borough, *shall* permit or suffer any privy, drain, gutter, sewer, or water-course, in or belonging to his premises, to become obstructed and so or in any other manner to become a nuisance to the neighbours or to the public, and shall neglect or refuse to cleanse or repair the same, and effectually remove the nuisance, for seven days after a notice in writing, signed by the surveyor shall have been given to such owner or occupier, or left on the premises—

“Or *shall* put or place, or cause to be put or placed, in any street, within the said borough, any sump-hole, sump-stone, stone-dish, or water-trough, for receiving or conveying dirty water into any drain, gutter, sewer, or water-course, or continue any such sump-hole, sump-stone, stone-dish, or water-trough now put or placed in any street.

“Or, if any such owner or occupier, not having a proper drain from his premises to the main sewer or street-drain, shall neglect or refuse to make and construct such drain, under the direction of the surveyor, for the space of fourteen days after notice in writing to construct such drain is given to such owner or occupier, or left at such premises from the said surveyor.

“Every person so respectively offending *shall*, for any such offence, forfeit and pay the fine or sum of ten shillings; and for a second offence, alleged and proved as such, and not committed on the same day as such first offence, *shall* forfeit and pay the fine or sum of twenty shillings; and for every offence being subsequent to a second offence, and alleged and proved as such, and not committed on the same day as any prior offence, *shall* forfeit and pay the fine or sum of forty shillings.”

Mr. T. Bently (member of the Town Council), and 45 years a resident in Southowram, stated:—

“Privy accommodation is deficient, and where privies do exist they are a great nuisance; the *fæcal* matter oozes through the wall into the rooms, and the stench is unsupportable.”

Dr. Alexander observed, by way of exposition:—

“Privies are often in close proximity to a dwelling-house which it abuts, separated only by a *pierpoint* wall, and sometimes serving for a dozen houses.”

The privies at Messrs. Akroyd's shed are fitted with boxes, and the contents removed once a week, for which there is a ready sale.

Whilst, connected with the tenements, large open pits are formed, and the soil with vegetable matter suffered to accumulate and putrify.

Mr. Phelon, a resident in Northowram, stated:—

“There are three privies directly in front of my residence, and are used by persons from other parts of the district. I cannot open my windows without being exposed to a most offensive and suffocating smell which emanates from the said privies; the *fæcal* matter flows upon the surface of adjoining premises.”

And, upon complaining to his landlord, received for answer, "I only care about getting my rent; parties may do as they like."

Mr. Phelon further observed, "Were it not for my business I would not live in the house rent free." And added, "No one takes any notice of the condition of the privies."

In addition to the evils of streets, courts, and places blocked up at one end, either with buildings, or dead walls, and tenements built back to back, the occupiers are under the necessity of hanging their clothes across the roads to dry, extending it from one side to the other; although the 24th bye-law is framed to prohibit the practice, thus:—

"That if any person *shall* fix or place any line, cord, or pole in or across the street, causeway, or footpath, or any part or parts thereof, without the consent, and under the superintendence and inspection of the surveyor or other officer having legal authority.

"Every person so respectively offending, *shall*, for any such offence, forfeit and pay the fine or sum of two shillings and sixpence; and for a second offence, alleged and proved as such, and not committed on the same day as such first offence, *shall* forfeit and pay the fine or sum of five shillings; and for every offence, being subsequent to a second offence, and alleged and proved as such, and not committed on the same day as any prior offence, shall forfeit and pay the fine or sum of ten shillings."

It is due to the inhabitants to state that the plan upon which the ground has been laid out for building, in plots 5 yards wide by 11 yards deep; on each plot two tenements erected back to back, allowing only 5 yards by 5½ yards to each, leaves them without a single foot of open space, other than the public street or way to their houses.

It is difficult to conceive anything more replete in defects than the state in which the various places, all of which are without any name attached.

The evidence adduced I found quite consistent with the truly deplorable, not to say vicious, state of a great portion of the tenements occupied by the industrial classes, many of whom, upon opening their door, or only window of the room wherein they work, in the hope of refreshing it with the breeze of summer, get instead a mixture of gases from reeking dunghills, or what is worse, because more insidious, from a soil which has become impregnated with organic matters imbibed long before; and now, though to all appearance dry and clean, emitting the poisonous vapour in its most pernicious state.

Subsidiary to measures for drainage and water supply, would be a measure for regulating the increments of the two townships, and preventing the continued reproduction in new districts of the evils which now depress the health and condition of the people.

OVERCROWDING AND WANT OF SEPARATE APARTMENTS.—During the inquiry my attention was called to several instances in which I found promiscuous mixture of the sexes in sleeping-rooms. As for example: the tenements are two stories high on

one side of each court, and two stories, with a cellar, on the opposite side, with but one small room on each floor. In those having two stories, the lower room is used for every domestic purpose, and the upper one as a combing-room, the *pot* standing in the centre, and beds turned up into one corner. A similar plan is adopted with those over the cellar, the latter apartment being let as a separate tenement. Hence, as a general rule, the tenements consist of a single room, or at most of two. The consequence is, brothers and sisters, and in some instances lodgers of both sexes (the latter, it is but right to say, are chiefly Irish), occupy the same sleeping-room, not unfrequently with the parent, although in many cases the parents sleep in the sitting-room.

Humanity shudders to contemplate the state in which large masses are found to live. Young women and boys advanced to puberty require to have separate rooms.

The following are some of the instances met with:—

Thirteen persons, consisting of a man, wife, and 11 children, occupy 3 beds, viz., 2 *stumps* and 1 *shakedown*. The family consisted of 5 boys of the respective ages 18, 16, 13, 11, 8, and 5 years each; 3 girls, 15, 13, and 9 years of age, the youngest a child 17 weeks old.

In a second instance, a family of 9 persons occupied 2 rooms, the father and mother sleeping in one, and the 7 children on two beds in the other (a workshop), viz., 5 boys, aged 19, 14, 8, and 5 years, and 3 girls, 16, 12, and 2 years of age.

In a third instance, I found 9 persons occupying a single room, and that a cellar, consisting of a widow and 8 children, viz., 3 girls, 24, 16, and 7 years of age, with 5 boys, 22, 19, 16, 11, and 8 years of age.

In a fourth instance, that of a man, wife, and 6 children, sleeping in one room on 3 beds, the eldest a daughter 22 years of age, the second a son 18.

In a fifth I found a family of 9 persons occupying but 2 beds, viz., a man, wife, 4 daughters, 17, 11, 5, and 3 sons, 15, 12, and 9 years of age respectively.

The size of the rooms being generally about 15 feet by 11 feet, by 8 feet, or 1,320 cubic feet, which to a family of 9 persons admits of only about 146 feet to each person, or one-fourth of the space proper.

The following Abstract contains a list of 1,011 tenements in the occupation of 1,027 families, comprising 4,818 persons, or an average of 4.765 persons per tenement. The privy accommodation varies: in Middle-street there is one privy for the use of 221 persons, the price paid for water supply varying from 4½*d.* to 12*s.* 10½*d.* per week, in money or estimated cost for labour.

Name of Street, Court, Yard, or Place.	Number of Houses.	Number of Families	Number of Persons.	Number of Privies.	Price paid per Week in Money for Water.			Ditto estimated Cost in Labour.			Number of Gallons of Water used for all purposes per Week.
					£.	s.	d.	£.	s.	d.	
NORTHOWRAM.*					£.	s.	d.	£.	s.	d.	
Single-row, Old Charlestown	12	14	59	1	0	1	5½	0	2	0	203
Fifth-street, „	23	24	144	2	0	2	1	0	2	1½	561
Fourth-street, „	28	29	142	3	0	0	11½	0	3	11½	809
Third-street, „	29	29	160	3	0	2	4	0	5	2	1,110
Second-street, „	24	25	111	3	0	2	5½	0	2	6½	856
First-street, „	25	25	129	4	0	2	7	0	3	4½	942
Pearson-street „	42	42	177	6	0	3	4½	0	7	2½	1,676
Morpeth-street „	19	20	101	4	0	1	9	0	4	3	978
Pollard-street	19	19	88	2	0	1	2	0	2	4	784
Black Pollard-street	6	7	31	1	0	1	3	0	0	4½	275
Charlestown-lane	16	16	68	2	0	2	5	0	2	0½	785
Spring-terrace	5	5	25	1	0	0	11	0	0	7	395
New Bank	120	121	586	27	0	6	4½	0	3	4½	6,598
Garden street, New Bank	74	75	318	15	0	3	11	0	4	0	3,050
Range-Bank	146	146	674	12	0	12	10½	0	2	11	6,214
Haley-hill	66	68	308	10	0	12	1	0	7	4	3,986
Brunswick-square, Haley-hill	23	24	110	2	0	4	2	0	4	0½	992
Pump-street	16	16	81	2	0	0	11	0	4	1½	727
Top-street	12	13	76	1	0	0	4½	0	1	8	776
Range-lane	11	11	64	1	0	1	0½	0	2	0	513
Dobby-hall	51	52	208	3	0	4	0	0	0	8	1,968
Queen-street	37	37	169	4	0	5	4	0	6	0½	1,466
Middle-street	43	44	221	1	0	5	9	0	4	8	1,966
Dublin-street	37	36	168	3	0	2	11	0	3	4	1,595
Abbetson-square	14	14	64	2	0	0	9	0	1	6½	496
Silver-street	17	17	83	5	0	0	4½	0	0	1	392
Coach-yard	19	20	110	2	0	1	1	..	..	..	866
Back-side	41	42	176	3	0	2	4	0	0	10	1,874
Stoney Batter	14	14	60	3	0	1	6½	0	2	3	586
Old-lane	6	6	31	1	0	0	1	0	1	0	367
Bowling-dyke	16	16	76	4	0	0	5	0	3	4	912
Total	1,011	1,027	4,818	133	4	9	0½	4	9	2	44,748
SOUTHOWRAM.†											
Caddy-field, including Swan-bank	155	157	700	12	0	5	11	1	11	1½	6,826
Waterside	13	12	59	4	..	..	..	0	0	6	695
Bailey-hall and Baily-hall-bank	87	87	369	17	..	..	..	0	16	7	3,864
Pine Berry-hill	35	34	156	5	0	0	3	0	8	5	1,731
Southowram-bank	108	123	593	17	0	0	10	1	2	11	5,772
Old-bank	77	84	379	14	0	0	5	0	15	1	3,885
Bank-bottom	83	111	419	11	0	1	4	0	14	6	3,740
Total	558	608	2,675	80	0	8	9	5	9	1½	26,513

* There are pumps to nearly all the streets in Northowram, but some of them are dry, and all of the water unfit for culinary purposes.

† One pump; at present there is no water in the well.

THOMAS SPIERS,
Superintendent of Police.

DRAINAGE OF STREETS AND HOUSES.--The sanitary effects obtainable by an efficient town drainage, independently of all other

measures, does not appear as having escaped the notice of the Council, by whom the following bye-laws have been promulgated:—

“ That if any person *shall* throw, deposit, place, or leave, or permit, or suffer to fall, run, or flow, any offensive matter or thing, into or upon any street, or into or in any well, stream, watercourse, beck, goit, pool, dam, pond, or reservoir of or for water, within the said borough, or shall throw, deposit, place, or leave, or permit or suffer to fall, run, or flow, any offensive matter or thing, into or upon any open or uncovered place within the said borough, whether surrounded by a wall or other fence or not, so as to be a common nuisance.

“ Or *shall* drown, or cast with intent to drown, any dog, cat, or other animal, in or into any well, stream, watercourse, beck, goit, pool, dam, pond, or reservoir of or for water, within the said borough.

“ Or *shall* throw, deposit, leave, or permit or suffer to fall, any litter, ashes, carrion, fish, dead animal offal, or rubbish, into any well, stream, watercourse, beck, goit, pool, dam, pond, reservoir of or for water, sewer, channel, pipe, drain, or sink.

“ Or *shall* place the sweepings or scrapings of any street within 3 feet of any grate or opening into any drain or main sewer.

Or *shall* in any street, lane, or road, place any such sweepings or scrapings, otherwise than in separate and distinct heaps, on the side of such street, lane, or road, within the said borough :

“ Every person so respectively offending *shall*, for any such offence, forfeit and pay the fine or sum of five shillings; and for a second offence alleged and proved as such, and not committed on the same day as such first offence, *shall* forfeit and pay the fine or sum of ten shillings; and for every offence, being subsequent to a second offence, and alleged and proved as such, and not committed on the same day as any prior offence, *shall* forfeit and pay the fine or sum of forty shillings.

“ It is however *provided*, that this bye-law shall not affect the running, as usual, of the public or private drains into the Beck, or Four Mills dam; and that no person shall be liable to a penalty for throwing, depositing, placing, or leaving any sand, ashes, or other material, in the time of frost, upon any footpath to prevent accident; or any dung, manure, or other material, in the time of frost, to prevent water in pipes from being frozen; or any litter or other proper material, in case of sickness, to prevent noise; or for throwing, depositing, placing, or leaving any rubbish or dirt, occasioned by the rebuilding, repairing, or altering of any house or building, so that sufficient space be left on or in the street where such rubbish or dirt shall be thrown, deposited, placed, or left, for carriages and passengers to pass along such street, and so that the said rubbish and dirt shall be sufficiently enclosed, and that such rubbish and dirt, and also such dung, manure, litter, or materials, shall be removed by the party throwing, depositing, placing, or leaving the same, within a reasonable time, or when required so to do by the surveyor of the said borough.”

Again, by the 12th bye-law, it is provided,—

“ That if any person *shall* empty or begin to empty any swine-sty, midden-stead, ash-place, or privy, within the said borough, or shall remove or begin to remove any night-soil, or other offensive matter or thing, in, along, or through any street, or use any carriage or cart for any such purpose, except between the hours of ten of the clock at night, and eight of the clock in the morning, from the first day of April to the first day of October, in every year, or between the hours of eight of the clock at night, and nine of the clock in the morning, from the first day of October to the first day of April, in every year; or *shall* wilfully, negligently, or carelessly stop or spill any such offensive matter or thing in the removal thereof;

or shall not carefully sweep, wash, and clean every place in which any such offensive matter or thing shall have been placed, slopped, or spilled."

It is then provided that,—

"Every person so respectively offending *shall*, for any such offence, forfeit and pay the fine or sum of five shillings; and for a second offence, alleged and proved as such, and not committed on the same day as such first offence, *shall* forfeit and pay the fine or sum of ten shillings; and for every offence, being subsequent to a second offence, and alleged and proved as such, and not committed on the same day as any prior offence, *shall* forfeit and pay the fine or sum of twenty shillings. And in the default of the apprehension of the actual offender, the owner of the cart or carriage employed for any of the purposes aforesaid, *shall* be deemed to be the offender.

"Provided that this bye-law shall not extend to the removing of ashes, dust, or manure, from any stable or cow-house, or from any midden-stead or ash place which is used only for keeping the same, so that the same is removed in such cart or carriage, and put into the same in some field, yard, or other private place, and not thrown or deposited in or upon any street, previously to being put into any such cart or carriage."

Mr. Rhodes, a resident and owner of a considerable number of houses in Caddy-field, stated:—That about 100 houses have been sold at less than 50 per cent. of the first cost. He had called a meeting of the owners to take into consideration measures for draining and sewerage of the place. And after a good deal of quarrelling, they could only agree to make one main V drain, 18 inches deep by 18 inches wide, at the bottom of Caddy-field. But the parties holding houses still refuse to make house drains or to enter the sewer. As an owner of property, Mr. Rhodes further stated, refuse has been accumulating at Pine-berry-hill for 40 or 50 years. *He can hardly name anything that would be a greater blessing to the inhabitants than the introduction of the Public Health Act.*

Mr. Barrowclough was called by the Town Clerk, and stated:—He was interested in about one-half of the land in Charlestown; that drains had been laid down in six streets, but they are not sufficiently deep to drain the floors of the cellars. And added, he believed the sanitary condition of this part of the town was very bad, and what with the dirty state of the place and noxious smells, the health of the working people is greatly impaired.

Mr. Howarth, a resident and owner of a large number of houses and shops, stated:—His tenants would be very glad to pay for cleansing and drains. That a complete system of sewerage is indispensable; parties residing in cellars are below the level of the water. Whilst privies are so placed as to admit of human excrements flowing into the open surface drains; and the smells arising therefrom are most offensive.

Mr. Barker stated:—There are only one or two private drains in the Pine-berry-hill district, and these were made by the occupiers; but the sewage is discharged upon the surface of the road. In Caddy-field, a district unsewered, except a drain at the bottom of four blocks of houses; the water, &c., used in the houses, and

excrements, are thrown into the streets and open kennels. This mode of disposing of the fæcal matter, mainly proceeds from the position of the privies, which are either at one end of the row, or in the middle; and used in common by a large number of people.

Mr. J. Priestly, in his evidence, stated:—The sewage from Range-bank delivers itself through the retaining walls, and flows upon the surface of the road; and in summer the effluvium is so offensive, that he has been obliged to put his handkerchief to his nose whilst passing these outlets. That in other parts, the sewage is allowed to flow upon the surface of spare ground. Mr. Priestly further observed, that he feels disposed to pay for his own property, and his tenants, if the work is done right.

Mr. E. Ramsden, owner of house property, and a resident in the North Ward, stated:—Drains in Garden-street are made by the separate owners, each pursuing his own plan. These drains are shallow, flat, and about two feet deep. Are frequently choked, and had himself been obliged to open one a few months since, which cost about 1*l.*; whilst his own health has been injured by the effluvium, and premises damaged by the soakage. In Charles-street the drains open out upon the surface, discharging foul water and filth upon the surface: this offensive state of things has long existed.

Mr. A. Green, member of the Town Council, stated:—Cess-pools prevail, and the smell arising therefrom is most unpleasant and sickening, particularly in hot weather. There is only one drain in the northern portion of the township (in the Old Bank), about 150 yards in length. Considers the application of the Public Health Act would tend greatly to improve the property, and enhance the health of the inhabitants.

Councillor Bentley stated:—He was a member of the Sanitary Committee, and, as a consequence, had visited the southern district. The only sewer he found was in Caddy-field; in all other parts the drains were open (surface drains), and formed receptacles for every description of filth, and foul water is always thrown upon the surface; Pine-berry-hill being in an undescribably filthy state.

By the 24th bye-law it is provided,—

“That all persons who *shall* throw out upon any street within the borough any water, which shall have been used for domestic purposes, or any other offensive fluid, *shall*, for any such offence, forfeit and pay the fine or sum of two shillings and sixpence; and for a second offence, alleged and proved as such, and not committed on the same day as such first offence, *shall* forfeit and pay the fine or sum of five shillings; and for every offence, being subsequent to a second offence, and alleged and proved as such, and not committed on the same day as any prior offence, shall forfeit and pay the fine or sum of ten shillings.”

WATER SUPPLY.—No previous investigations had led me to conceive the great extent to which the labouring classes are subjected to *privations*, not only of water for the purpose of ablution

and house cleansing, but of wholesome water for drinking and culinary purposes.

The Board will hardly be prepared to hear the fact, of workmen rising at two o'clock (A. M.), literally in the night, for the sole purpose of getting the first turn at the source where they have to wait at this season of the year, not merely their turn, but for two or more hours to secure some *two or three gallons* of water. Whilst in the day, it was stated by many of the women, they are occupied three and four hours in a similar work; several of whom I met with, stated they had then been from their houses waiting their turn for the time above stated. This is certainly "earning the water."

The Town Clerk, in opening the case on behalf of the petitioners, stated:—

"The want of water is greatly felt, pressing heavily on the inhabitants: the entire district being without any proper or regular supply, there being but two *watering* places used in common by inhabitants and cattle; and during the summer months, large numbers are obliged to purchase the water they use, and that too at a very extravagant rate."

Dr. Alexander stated:—

"The scarcity, hardness, and sometimes positive impurity of this fluid, as experienced within these two districts, needs no comment, since they have formed one of the principal objects sought by the intelligent promoters in their application for the benefits of the Public Health Act."

Alderman Dennis stated, several persons had been with him to state they were obliged to *steal* water for their use, whilst a large portion of the inhabitants from Southowram, about 800 in number, abstract their supply from the dropping well in the adjoining township. This water rises in a cellar about 10 feet from the surface, at the *Cat in the Window*, and about 7 yards from the east end of the parish churchyard, the surface of the burial-ground being about 8 feet from the surface of the street; the water flows from this source down to the dipping place by the side of the bridge, a little below a main sewer in the township of Halifax, the sewage frequently soaking into the well, also washings of barrels, &c.

E. Akroyd, Esq., stated, that his firm had been put to very great expense in the endeavour to procure water for their works; and from the destitute state of the people for want of water, the urgency thereof induces them to trespass during the moonlight nights.

Mr. Beaumont observed:—

"Many of the inhabitants travel a distance little short of half a mile for every turn of water they use. I met parties as late as 11 o'clock, P. M., with pails of water on their heads. Occupiers of more than 100 houses go to one source, some of whom declared they had not been able to get their breakfast before two o'clock in the day for want of water."

The tenants from 450 houses derive their water from the Holy well in the Old Bank. At the time of my inspection, cans and

other utensils were placed on ledges of stone to catch the water as it *dropped*, for it did not amount to a stream.

Mr. Ramsden stated, "The water is very bad, and some years since he sunk a well about 12 yards deep for the purpose of supplying his houses. A neighbour subsequently made a well in adjoining premises, and as a consequence, his own well was drained; whereupon he made a second well of a greater depth, carrying it below that of his neighbour, whose well in return was laid dry; and has now plenty of water, but the quality is bad, and only fit for *swilling*. On behalf of his tenants he pays compensation of 1s. in the pound on the rental, for the right of abstraction merely. The two wells cost about 20l.

Assuming the water of good quality, it would (according to the evidence of Mr. Ramsden) cost for a supply to houses let at 7l. per annum, by means of wells and pumps, 10l. per house for laying down the set of works. The interest upon the outlay, including wear and tear, would amount to 17s. 6d. per annum.

In reference to wells and the cost for sinking, Mr. J. Wright Child, engineer, &c., gave the following evidence:—

"The Messrs. Akroyd and Co. had sunk different wells for supplying their extensive sheds and other works with water. One of these wells was put down 30 yards, the first 19 yards being 6 feet in diameter, and the remaining 11 yards a 6-inch bore-hole. The cost of sinking was 50s. per yard, and for boring 15s. The cost of raising water estimated at 3s. 4d. per 1,000 gallons."

The evidence adduced by all the witnesses examined, concurrent with the complaints made to me by large numbers of the industrial classes, immediately on entering the courts and houses for inspection, exemplified the great necessity for alleviating their present deplorable condition, to say nothing of the evil arising from keeping water in open utensils for 24 hours in the midst of a vitiated atmosphere; a condition, the Board is fully aware, that cannot fail to impair the health of those who use it.

ROADS AND STREET CLEANSING.—The local arrangements for repairing, draining and cleansing the roads, present instances of grievous defects, and just grounds for complaint from want of an equitable appropriation of the funds raised. "The interests in each township are distinct;" and in their present divided state, the non-repair of miry and uncleansed roads, formed a subject of loud and general complaint. That this complaint was well founded—it having been founded on the loss of human life—the evidence adduced by Mr. Councillor Bentley but too truly confirms:—

"The roads are steep not *set* (paved), and in a wretched condition, particularly the water side. Carts sink in up to the nave: foul water often lies in large pools. To foot passengers they are impassable, and the inhabitants are driven to walk on the canal bank. No less than 13 persons have been drowned from taking the latter road in dark nights, whilst I and my men have, at various times, rescued a dozen others from drowning. The roads at Pine-berry-hill are undescrivable."

Mr. Rhodes stated :—

“No less than six persons to my own knowledge would have been saved their lives within the last 12 years, had the water-side road been passable for foot passengers in the winter months ; but they are only able to pass from one part to the other by leaving the main road for the canal bank. The latter is, however, a longer road than the *water-side*, hence the object of pursuing the former route is not that of saving time, but to avoid wading through mud up to the calf of the leg.”

Councillor Beaumont stated :—

“I have been frequently on the Board of Surveyors of Highways. The ratable value of the property in Northowram, situate within the borough, is 8,461*l.* 7*s.* The highway rate is made upon the assessment for the poor-rate ; and that part of the district of Northowram that is within the borough has contributed about 300*l.* per annum for some years past to the highway rate ; although only about one-sixth of the amount, or 50*l.* per year, has been expended in the district upon which the amount has been levied ; the length of the roads adopted by the surveyors being five in number and only about 1,740 yards in length, whilst there are from 60 to 70 undedicated roads. A large portion of the people work in the different mills. They contribute to the rates, and have to wade through dirty streets to reach their work ; and in winter this evil is aggravated by darkness.”

Mr. Beaumont added :—

“In 1832, I was engaged in endeavouring to prevail on all the owners voluntarily to unite for making improvements, but unfortunately one dissentient frustrated the measure. The poorer class pay largely to the rates, but are not fairly treated in this matter.”

John Jagger, acting surveyor of highways, was examined by the town clerk, and stated :—

“I have filled the office of acting surveyor to the Board for 13 years. Complaints of the bad state of a great number of roads have been repeatedly made during the last seven years ; but the Board have said I am not to repair the streets, and I *don't spend one shilling in a year upon them*. I, however, complain to the owners of the property, that the open drains are not kept clean, and threaten to summons the people for throwing their slops and foul water and excrements upon the roads ; but we never have summoned any person for the offence. I repair portions of the three turn-pike-roads, viz., Godley-lane, Wakefield branch, and the Leeds and White-hall. A sum of 33*l.* 6*s.* 8*d.* being paid by each of the latter, and 150*l.* by the former trust to the Board of Surveyors for that purpose by agreement. The amount expended in the year was 641*l.* 16*s.* 4*d.*”

Mr. Manks stated that he had been chosen surveyor of highways for that part of Southowram, situate without the borough (without salary), but neither himself or his predecessors have ever done anything to the road called the “Water Side.” Has 10 men at present employed on the roads, at wages varying from 2*s.* to 2*s.* 6*d.* per day ; himself and co-surveyor employ each an assistant at 2*s.* 6*d.* per day, and 1*s.* a-week extra.

Pine-berry-hill (road) is an ancient road, never repaired by the surveyors. Bayley-hall-bank, with some others are also left unrepaired. During the past year 862*l.* 13*s.* 9½*d.* has been expended on roads in other parts of the district, and the rate levied on the householders was 1*s.* 3*d.* in the pound.

Mr. Rhodes stated :

“The ‘Bank’ is a road of great traffic, yet it is almost rendered impassable by mud in winter, and dust in summer. In 1848 two rates were levied, amounting to 3s. 4d. in the pound, by 1s. 6d. and 1s. 10d. each for the year, whilst in 1847, it was 1s. 9d.; in 1846, 1s. 3d.; in 1849, 10d.; and in the present year they have already levied a 5d. rate.”

Mr. S. Howarth stated:—

“There is the greatest difficulty in getting any improvements made. The Board of Surveyors pass a resolution for works to be done at one meeting, and at a subsequent public meeting pass a counter resolution, thus stultifying their own measures.”

TOWNSHIP of NORTHWRAM, Year ending 25th March 1849.

Schedule to be filled up by the Surveyors of Highways of all Parishes, and presented by them with their Accounts to the Magistrates, at the end of every year.

State of the Roads and Highways	Generally in good repair; those which are not are being repaired at present.
„ Bridges	In good repair.
„ Causeways	Generally in good repair; are attending to those which are not so.
„ Hedges and Ditches	Hedges, none that require cutting; ditches regularly opened and cleansed.
„ Watercourses	Opened and cleansed when requisite.
State all Nuisances	
„ Encroachments	Encroachment on the Hollin Greave-road, near Highsunderland. W. Priestley, Esq., owner.
State the extent of Roads and Highways the parish is liable to repair.	7¼ miles, 389 yards, turnpike roads, and 20 miles, 289 yards, highways.
„ what portion thereof has been repaired and where.	About 4 miles turnpike-road, viz., Godley-lane, Denholme Gate, and Wakefield Branch, more or less through the township.
„ „ materials were used for such repair.	Dross, from the Low Moor Iron Works; stone and refuse from the Stone quarries.
„ the expense of such repairs	£1,219 0 10½
„ „ amount levied during the year	966 10 0 Highway Rate.
	200 0 0 From the Godley-lane Trust
	33 6 8 „ Wakefield „
	33 6 8 „ Leeds Whitehall „
	25 0 0 „ Denholme Gate „
	2 0 0 „ Leeds and Halifax Turnpike-road.
	0 13 4 „ Governors of Charity
	£1,260 16 8

A Board of Surveyors consisting of John Foster; David Spencer; Jeremiah Best; Robert Crossley; James Dean; Oates Ingham; Thomas Barraclough; Thomas Moore; James Lassey; Robert Midgley; Joseph Wilkinson; Thomas Cordingley.

THOMAS BARRACLOUGH, } Present
JEREMIAH BEST, } Surveyors.

Sworn to before us, this } J. R. RALPH.
7th day of April 1849, } JOHN WATERHOUSE.

TOWNSHIP OF SOUTHOWRAM, Year ending 25th March 1850.

State of the Roads and Highways	In tolerable repair.
„ Bridges	Ditto.
„ Causeways	Ditto.
„ Hedges and Ditches	Ditto.
„ Watercourses	Ditto.
State all Nuisances	None.
„ Encroachments	None.
State the extent of Roads and Highways the parish is liable to repair.	About 13 miles.
„ what portion thereof has been repaired, and where.	The whole, more or less.
„ materials were used for repair	Freestone, Galliard stone, dross, and ashes.
State the expense of such repairs	£ 862 13 9 $\frac{3}{4}$.
„ amount levied during the year	832 11 3 from Rates.
	175 8 10 other sources.
	<hr/>
	£1,008 0 1

A Board of Surveyors consisting of Samuel Naylor ; Joseph Blakey ; Thomas Wood ; Abraham Haigh ; Thomas Pearson ; John Haigh.

RILEY MANKS, } *New*
WILLIAM HEBBLETHWAITE, } *Surveyors.*

SMOKE NUISANCE.—Dr. Alexander, in speaking of the evils to which the inhabitants are exposed, stated :—

“ The smoke is universally felt as a great nuisance in these parts of the borough, the prevailing winds casting it directly upon the rising grounds ;— that independent of the waste of fuel, the increased consumption of soap and the injury done to furniture hangings within and fronts without the houses, to the neglect of opening the windows for common ventilation ;— that every deviation from nature’s own atmosphere is more or less detrimental to animal and vegetable salubrity.”

The Mayor stated that the manufacturers were fully sensible of the evil arising from smoke ; and, with a hope of being able to effect its diminution, his own firm alone had expended several hundred pounds in the application of various patented processes for consuming smoke, which had answered for a time, yet, in consequence of the injury done to the boilers, and the great wear and tear of the apparatus, they had been obliged to discontinue them at considerable loss.

Mr. G. Haigh stated, he had no hesitation in saying the nuisance arising from “ smoke,” in combination with the want of drainage and water supply, seriously injures the health of the inhabitants. Hall’s machinery has been applied, for remedying the smoke nuisance, and it has failed.

BURIAL GROUND.— Mr. G. Haigh stated that the only burial-ground belonging to the district, called the Baptists’ Burial-ground, situate at Haley-hill, is in the vicinage of dwellings, and a densely-populated district. His neighbours have made repeated applications to him to get the nuisance arising from the state of this place of sepulture removed. The area of this ground is

small, and the surface raised considerably above the level of the street and floors of houses.

Mr. Wilson stated that, to the best of his knowledge, the number of interments during the six years ending 1849 amounted to 38.

YEARS.	Children.	Adults.	Total.
1843	2	3	5
1844	5	4	9
1845	2	2	4
1846	1	3	4
1847	2	2	4
1848	3	1	4
1849	4	4	8
Totals	19	19	38

J. Best, grave-digger, stated, he had dug the ground for 21 years ; the soil is clay, and he removes bones in getting down a grave ; that he had disinterred bodies, and one of them belonged to himself, but in re-interring it, the body and coffin fell to pieces.

Mr. G. Haigh observed, he has frequently looked into the graves ; bones are dug up and scattered about in a very disgusting manner.

Dr. Alexander stated, the burial-grounds situated within the two townships, available at all for the borough parts of them, are three in number. The great majority of interments from these parts, however, takes place in Halifax, though all our places of sepulture, with, perhaps, one exception, are either already full, or, for other obvious reasons, ought to be closed. In the Baptist chapel-yard, at Haley-hill, with an area of about 150 superficial square yards, I calculate that, at a very moderate computation, 350 corpses have been interred. Deducting the spaces devoted to the path-way and steps, and allowing the smallest possible accommodation and no intervening soil between grave and grave, the remains of seven person, on the average, have been placed into each since the foundation of the chapel. One family, of four persons, had been interred within the walls.

The distance, and hilly road to Queen's Head, precludes its new church-yard from the reckoning as a place of burial ; though, for similar reasons, that of St. Ann's, and the Methodist chapel in Southowram, are not generally resorted to by the borough parts of that township. The Methodist chapel-yard in question is understood to be full ; whilst the interments at St. Ann's, with an area of about a quarter of an acre, including the site of the building, are now about 30 in number annually, with a considerable plot of hitherto unbroken ground.

The following statement, which I have received since my departure from Halifax, is of importance, as it affects the rates :—

“ Having devoted much attention to sanitary objects, more especially in reference to the cleansing and purifying of cottage tenements, yards, areas, and the personal cleanliness of the poor, in my capacity of relieving officer of the Elland district, including seven townships in the Union, I consider that pauperism decreases in the ratio of the adoption of such measures.

“ RICHARD WALKER,

“ *Halifax, 29th May 1850.*”

“ *Relieving Officer, Elland.*

“ SIR,

“ *Halifax Union, 23rd May 1850.*

“ I BEG to inform you that the numbers of cases relieved on account of sickness during the past year in that part of *Northowram township* which is situated in the *borough of Halifax*, with the total amount of relief given to them during that period, is as follows :

Number of Cases.	Relief given therein.
Thirty-three . . .	Eighty-six Pounds and Seventeen Shillings.

“ Yours, &c.,

“ CHARLES DENHAM,

“ *W. Ranger, Esq.*”

“ *Relieving Officer, Northowram District.*

“ SIR,

“ *Halifax, 25th May 1850.*

“ THE number of persons relieved on account of sickness, for the Southowram district, within the borough of Halifax, during the last twelve months, is 63, and the amount paid is 11*l.* 16*s.* 6*d.*

“ Yours, &c.,

“ C. H. HEY,

“ *W. Ranger, Esq.*”

“ *Assistant Relieving Officer.*

Messrs. JAMES AKROYD and SONS' Works, NORTHOWRAM, HALIFAX.

The Bowling Dike Spinning Mill.

Woolsorters	90
Overlookers, mechanics, warehousemen, and males above 18 years	40
Females above 18 years	100
Females and males from 13 to 18 years	235
“ “ from 8 to 13 years	440
	905

24 privies for the 905 working people at the above mill.

The Weaving Shed, Haley Hill.

Weavers and others employed in the process	1,100
	2,005

36 privies for the workpeople at the weaving shed.

The library for the use of the workpeople and tenants, 4,500 volumes of the choicest moral, instructive, religious, and scientific works; there are only about 30 novels. There are 800 readers of both sexes; the readers increase in numbers monthly, and manifest a decided preference for works that are useful, moral, and religious. No charge is made and no fines exacted, and the books are well taken care of.

Day school for the workpeople under 13 years; 460 short timers; male and female about equal in numbers; they pay no school fees; each finds a Bible, one reading-book and copy-books, the arithmetic and other reading-books are found free of expense by the firm; 340 of them are able to read in the Bible, 300 are writing, and 360 are in arithmetic. None are absent but from sickness; 17 day scholars attend the same school. The number in attendance in the forenoon is 257, and in the afternoon 247. The school is conducted by a trained master and mistress from the Glasgow Normal Seminary. Religious and moral instruction is a prominent feature in the education given. The large school is 100 feet long by 36 feet wide, and 24 feet high. The class-room adjoining is 36 feet long by 16 feet wide by 22 feet high. In the large room is a gallery that seats 350 children, and in the class-room a gallery that seats 120 children. Both rooms are ventilated from above with Watson's ventilators. Inventor considers the large one is thoroughly ventilated, the small one not enough, but an additional large ventilator had been ordered for it. The advantage of these ventilators is said to consist in taking off the vitiated air, and supplying pure air, without the least risk of catching cold and without heating the rooms.

In the school is a large and well-tuned organ used for the worship of the Sabbath School.

There are about 400 children of the workpeople who attend this school on Sabbath, and about 50 of the teachers are connected with the works.

The expense of the Sabbath School is borne by the firm.

The male and female teachers of the Sabbath School meet once a week to prepare the lessons for the ensuing Sabbath.

On the Monday evening the schoolmistress has a large class of females from 13 to 25 years, to learn to sew, knit, and cut out.

A mathematical class, conducted by one of the weavers, has lately been established for the benefit of the young men and overlookers.

There are 16 privies for the school.

Sick and Death Brief.—160 males at these works form a sick annual brief; they each pay 6*d.* weekly, and at the end of the year the balance not paid for sickness and death is equally divided.

In sickness a member receives 10*s.* 6*d.* for the first 16 weeks, and 7*s.* 6*d.* for the following 16 weeks.

If the sickness continues he has 5*s.* for 20 weeks, and if still sick, to prevent members being pensioners for years, 5*l.* is given to free all claims. If the member recovers health he may, however, re-enter the society.

At death 9*l.* is paid for a male, and 6*l.* at the death of a member's wife.

All the members except two are members of other benefit societies.

Many of the females and males are members of the Christian Mutual Provident Society; and are, in that society, paying for endowments, as well as relief in sickness, and sums at death and medical aid.

Messrs. James Akroyd and Sons' self-supporting dispensary: to enable the workpeople and their families to receive medicine and medical attendance on payment of small quarterly contributions.

Physician	. . .	Dr. W. Alexander
Surgeon	. . .	Mr. J. W. Pearce.

Dr. Alexander gives attendance at Mr. Pearce's Surgery every Monday, Thursday, and Saturday, from 12 to 1 o'clock.

Choral Society.—About 100 of the workpeople have formed themselves into a choral society. They have had two public successful performances, once with the organ as an accompaniment. They meet for rehearsal or practice one a month. They have a valuable musical library. The members each pay 2*d.* a month. The society is also supported liberally by the subscriptions of the firm, who occasionally attend the performances, and by other gentlemen. The meetings of the society are held in the large school.

Instrumental Band.—A number of the workpeople have formed a band apart from the choral society; they meet for practice once and twice a week in the school.

Garden Allotments.—The Messrs. Akroyd gave some of their own, and rented other land for garden allotments for their workpeople and tenants. There are upwards of 100 allotments. The garden tenants have formed themselves into the Haley Hill and Newton Horticultural Society; they have an annual show of garden produce and pigs; each member pays 2*d.* a month; their subscriptions and the rents (given by the firm) are appropriated to the purchase of prizes for the successful competitors.

DEAN CLOUGH MILLS BENEFIT SOCIETY.

Number of members (average) 400.

Annual expenditure 178*l.* 10*s.*, viz.—

	£.	s.	d.
Sick payments . . .	172	5	0
Expenses	6	5	0

Average number of persons sick annually, including repeated sickness, 210; each nearly 17 days.

Average payment to those sick during two years, 1848 and 1849, 16*s.* 4½*d.* each per annum.

Or, presuming the whole of the members in the society to have had an equal amount of sickness, then there would be—

Average sickness, 8½⅓ days.

Average payments to the sick annually, 8*s.* 7½*d.*

Age of Members.

5 above 65	years of age
20 from 60 to 65	"
50 „ 40 to 60	"
325 (average)	32

Equal payments to the fund, two-pence each per week.

Relief given, 6*s.* per week for 20 weeks. Then 3*s.* per week for 20 weeks more; and if sickness continues, at the committee's option, say 1*s.* 6*d.* per week onward.

Since the date of the inquiry, I have received the following statement relative to sick clubs, &c. :—

SIR, 32, Rhodes-street, Halifax, June 17, 1850.

Mr. BEAUMONT has desired me to forward the following statistics: they may be too late for the purpose you intended; but you are at liberty to make what use of them you may think proper. I could not procure them so soon as I expected. The analysis I have made of the sickness relief fund is, I trust, what you desire.

The rates of relief previously reported to you came into operation for the year commencing March 1850.

	1844-5.	£.	s.	d.
81½ weeks' sickness of 37 members at 12 <i>s.</i> per week		49	5	6
Funeral money for a member 9 <i>l.</i> ; for a member's wife 6 <i>l.</i>		15	0	0
Printing rules		2	0	0
		<hr/>		
		66	5	6
Returned of contributions 15 <i>s.</i> 4 <i>d.</i> to each of 113 members		86	12	8
		<hr/>		
		£152	18	2

Report to the General Board of Health,

		£	s.	d.
In the course of the year each				
member paid	.	1	7	0
Less sum returned	.	0	15	4
		<hr/>		
		£0 11 8 or 1s. per calendar month		
1845-6.				
		£	s.	d.
89½ weeks' sickness of 39 members at 12s. per week	.	53	14	6
Funeral money for 1 member 9l.; for 2 members' wives 12l.	.	21	0	0
		<hr/>		
		74 14 6		
Returned of contributions 14s. 10d to each of 119 members	.	88	5	2
		<hr/>		
		£162 19 8		
1846-7.				
		£	s.	d.
In the course of the year each				
member paid	.	1	7	0
Less sum returned	.	0	14	1
		<hr/>		
		£0 12 2 or 1s. per calendar month		
1846-7.				
		£	s.	d.
216½ weeks' sickness of 46 members at 12s. per week	.	129	14	0
Funeral money to 4 members 36l.; for a member's wife 6l.	.	42	0	0
		<hr/>		
		171 14 0		
Returned of contributions 1s. to each of 128 members	.	6	8	0
		<hr/>		
		£178 2 0		
1847-8.				
		£	s.	d.
In the course of the year each				
member paid	.	1	8	0
Less sum returned	.	0	1	0
		<hr/>		
		£1 7 0 or 2s. 3d. calendar month		
1847-8.				
		£	s.	d.
51 week's sickness of 21 members at 12s. per week	.	30	12	0
8 " 9 " 12s. "	.	4	16	0
16 " 11 " 9s. "	.	7	4	0
6 " 1 " 6s. "	.	1	16	0
		<hr/>		
		44 8 0		
Funeral money to 2 members' wives 6l. each	.	12	0	0
		<hr/>		
		56 8 0		
Returned of contributions 16s. 4d. to each of 108 members	.	88	4	0
		<hr/>		
		£144 12 0		

	£	s.	d.
In the course of the year each			
member paid	1	6	6
Less sum returned	0	16	4
	<u>£0 10 2 or 10d. per calendar month.</u>		

1848-9.

	£	s.	d.
111 weeks' sickness of 26 members at 12s. per week .	66	12	0
26 " 2 " 9s. " .	11	14	0
13 " 1 " 6s. " .	3	18	0
	<u>82 4 0</u>		
Funeral money to 3 members 27l.; for 3 members' wives 18l.	45	0	0
	<u>£127 4 0</u>		
2½ additional weeks sickness to 2 members at 12s. per week	1	13	6
	<u>£128 17 6</u>		

	£	s.	d.
In the course of the year each			
member paid	1	9	6
Less sum returned to 103 members each	0	4	6=23 3 6
	<u>£1 5 0 or 2s. 1d. calendar month.</u>		

1849-50.

	£	s.	d.
49 weeks' sickness of 20 members at 12s. per week .	28	16	0
52 " 1 " 6s. " .	15	12	0
4½ " 5 " 12s. " .	2	14	0
	<u>47 2 0</u>		
Funeral money to 1 member	9	0	0
	<u>56 2 0</u>		
Returned of contributions 15s. to each of 94 members	70	10	0
	<u>£126 12 0</u>		

	£	s.	d.
In the course of the year each			
member paid	1	7	0
Less sum returned	0	15	0
	<u>£0 12 0 or 1s. per calendar month</u>		

SUMMARY.

	Members.	Members Sick.	Weeks' Sickness.	Cost Each.	Amount paid for Sickness.	Death Money to Members.	Death Money to Members' Wives.
					£ s. d.	£ s. d.	£ s. d.
1844	113	37	81.4	1.0	49 5 6	9 0 0	6 0 0
1845	119	39	89.3	1.0	53 14 6	9 0 0	12 0 0
1846	128	46	216.1	2.3	129 14 0	36 0 0	6 0 0
1847	108	32	81.0	0.10	44 8 0	..	12 0 0
1848	103	30	150.0	2.1	83 17 6	27 0 0	18 0 0
1849	94	26	105.3	1.0	47 2 0	9 0 0	..
	665	210	723.5	8.2	408 1 6	90 0 0	54 0 0

Average rate of contribution for 6 years 1s. 4½*d.* per calendar month.

Average number of days' sickness for each member per year 6½ days, excluding Sabbath.

Average number of members, 111. Total deaths of members in 6 years. 10; of members wives 9, or 1.67 per cent of males, and 1.5 of females if each member had a wife.

In addition to the workpeople returned as working at the Bowling-Dyke and the Shed in Northowram, there are the following who work at home, and about 100 of the weavers in a large shop in Haley-Hill.

Wool-combers, including women and children, as jiggers and pickers	2,500
Hand-loom weavers	1,050
Who also employ winders of weft	510
	<hr/>
	4,060
At the Copley worsted spinning mill, 2 miles distant from Halifax, there are employed men, women, and children	1,500
Previously returned	2,005
	<hr/>
	7,665

At Copley there is a large shed erected capable of accommodating many hundreds of workpeople seated at long tables at their meals. Ovens and boilers are there erected in the dining shed for heating food brought from a distance and to enable the workpeople to co-operate and purchase food in large quantities and cook it on the premises, of a superior quality, and much cheaper than can be done at home. A committee of the workpeople is appointed to purchase the provisions. The firm has erected a village of superior Gothic cottages for the workpeople; each cottage has three rooms and a cellar, a small garden and privy in front. Allotment gardens are also provided, and a horticultural society established. There is a brass band of the workpeople, and a superior Gothic school with three class-rooms, and a large playground furnished with plants and two circular swings. The school is well ventilated, and on Sabbath is used for public worship, and as a Sabbath school. A library, free of charge, of 1800 volumes, is in the school for the use of the village and workpeople.

Our room at Woodside School, Haley Hill, has now received another large "Watson's Ventilator."

I am, Sir, yours, respectfully,

Wm. Ranger, Esq.

CHARLES WATSON.

ABSENCE OF PLANS, &c.—In January 1850, Mr. Councillor Beaumont drew the attention of the Council to the fact of there

being no accurate plan of the borough, by the following notice of motion:—

“ That with a view to the introduction of measures of gradual, efficient, and economical improvement in the sanitary condition of the borough, it is desirable that a map or survey be made, on which the proper levels and contour lines shall be laid down as the basis of a correct system of drainage, applicable to the drains already formed, and to those which may hereafter have to be constructed, and that this survey be accessible to the inhabitants, who may be engaged in the erection of tenements of whatever class, so that they may be saved from the loss and inconvenience experienced by their dwellings being put upon wrong levels.

“ Mr. Councillor BEAUMONT, in formally proposing this resolution, said, I suppose you are aware of the fact, recorded in the public documents of this country, that Halifax is without a public map or survey of the town or district, comprehending a proper system of levels,—that there are no public arrangements for a system of drainage, now considered indispensable for the public health and convenience. Now, are things to continue as they are, or are steps to be taken to remedy them? There are few towns in the West Riding of Yorkshire better situated for improvement than Halifax. I have it daily under my eye, and am strongly inclined to believe that under a judicious system of management, improvements of a comprehensive character, worthy of the town, satisfactory to the ratepayers, and highly remunerative, may be readily carried out. A noble spirit of enterprise and untiring industry is at work all around us. Private persons—commercial firms, and public companies, are doing much to mend the appearance of the neighbourhood. A taste for improvement has got hold of the public mind, and the onward march of progression is to be seen in whichever way we turn ourselves—in our mills—our manufactures—our shops and our dwelling-houses. Gentlemen, do you think things will be stopped where they are, or that they will be allowed to retrograde? I can tell you they will not. Do you think in the march of improvement public bodies will be suffered to lag behind?—that the corporation of Halifax will be permitted to stand still? Some persons there may be who think so, I believe they are but few, and that they will soon see reason to alter their opinions.

“ I am much mistaken if the inhabitants of Halifax are not awake to the improvements of the age—and if there be not a growing desire among them, that ‘the nooks and corners’ of ‘the good old town’ should be brushed off, and the public streets and public thoroughfares formed to a style more appropriate to the age in which we live, and that our elongated cesspools, our private folds and courts, be purged of their filth, and that the cause of public reproach as to them should be rolled away. Let them know that these things can be done without entailing heavy burdens upon them, and they will be impatient at the way in which things are now going on. Something must be done to enliven the town and to benefit the ratepayers; and we of this council must unite and co-operate to make Halifax what it ought to be,—a centre of attraction to the surrounding villages.

“ The MAYOR considered this subject of great importance. It had often struck him lately that in the event of the removal of some two or three members of the council, and of their surveyor, who knew every nook and corner almost in the town, that they would find themselves extremely awkwardly placed, and would have to dig here and there, and almost everywhere, to find a water pipe or a drain. He thought there hardly could be two opinions as to the importance and the desirability of a map or survey being made, to show every water pipe and gas pipe, every water cock, and the drains, with their levels. Such a document as this would be of very great value to the town at large. They were aware that the Ordnance Surveyors had been for some time in this neighbourhood.

He believed they were allowed to make a little money by working in their leisure hours for private individuals, in drawing their plans and levels. He had no doubt therefore that they might obtain such a map or survey contemplated by Mr. Councillor Beaumont at a very reasonable cost."

Great anxiety was expressed by owners of property, in their evidence, and all but concurrent feeling manifested by their numerous tenants for a speedy amelioration of their present condition by the application of the provisions of the Public Health Act, whereby they may be enabled to possess an adequate supply of pure wholesome water, obliterate their elongated cesspools, and secure the abolition of large open soil-pits situate in close proximity, and, in some instances, even under their dwellings, heavily charged with putrescent matter evolving noxious gases, to the poisoning of that atmosphere, in lieu of admitting its free action as a disinfectant.

TOWNSHIP OF NORTHWRAM.

No.	Houses Rated within the Borough.	Number Excused.	Number Void.
	£. £.		
959	Under 5 .	14	108
61	5 and under 10 .	..	5
16	10 ,, 15 .	..	1
10	15 ,, 20 .	..	1
7	20 ,, 25 .	..	1
2	25 ,, 30 .	..	..
4	30 ,, 35 .	..	..
1	35 ,, 40 .	..	..
4	40 ,, 50 .	..	..
1	50 ,, 60 .	..	..
2	60 ,, 70 .	..	..
..	70 ,, 80 .	..	..
..	80 ,, 90 .	..	..
2	90 ,, 100 .	..	..
1	100 ,, 120 .	..	..
..	120 ,, 140 .	..	..
4	Above 140 .	..	..
1074		14	116

RICHARD SUTCLIFFE.

TOWNSHIP OF SOUTHWRAM.

No.	Houses Rated.	Number Excused.	Number Void.
	£. £.		
543	Under 5 .	27	24
26	5 and under 10 .	1	1
4	10 ,, 15 .	..	..
4	15 ,, 20 .	..	..
3	20 ,, 25 .	..	..
17	Above 25 .	..	1
597		28	20

JAMES WOMERSLEY.

REMEDIAL MEASURES.

The sympathy manifested by the witnesses called on behalf of the promoters of the inquiry, combined with the information received in the course of a domiciliary inspection, strengthened by the earnest importunities of the industrial classes which met my ear on entering each street, place, and house, to say nothing of the condition of their tenements, amply demonstrates the very great necessity there exists in a sanitary point of view for an immediate unrestricted supply of pure and wholesome water, extended to the interior of every tenement.

Its provision, therefore, will form one of the earliest measures for the consideration of the Local Board.

In treating of the water supply, seeing that an intermittent system prevails in those parts of the borough already supplied, it is material to observe (for the guidance of the Local Board), that experience has established the fact (beyond all question) of a constant system being, in every way, superior to that of the intermittent.

It is more economical, not merely in a monetary point of view, but also in that of quantity, whilst the water itself, from its non-exposure in open utensils, cisterns, casks, &c., is wholly excluded from absorbing offensive deleterious gases, or becoming otherwise tainted.

In the Report of the General Board of Health on the metropolitan supply, it is stated as aphorisms, "that they who drink water which has stood for a time, or been exposed in a town, drink town air, whilst those who drink water brought direct from any elevated rural district, without exposure, are drinking country air."

On the accustomed estimated supply of 100 gallons per day for each house, an estimate on average of houses, including factories, breweries, and the quantity requisite for the two divisions of Northowram and Southowram, situate within the borough of Halifax, will amount to 180,800 gallons.

Having obtained from Dr. Alexander, a distinguished member of the Yorkshire Geological Society, and who has paid particular attention to the formations in the vicinage, results of his observations, and also assistance in examining various sources, I am led to the conclusion that water answering the various requirements consonant with the provisions of the Public Health Act may be secured to the inhabitants. The following shows the result of Dr. Playfair's investigation, but before finally determining on the source, I should recommend a repetition of the analysis.

Designation.	Hardness.
HALIFAX.	
1. Lower Well Spring, Township Ovendon	4.2
2. Kanah Steps, Northowram	5.8
3. Hazelhurst Spring, Northowram	4.6
4. Upper Brier, Township Northowram	8.8
5. Hawley Green, Township Northowram	5.2
6. Victoria Reservoir, Halifax	1.5
7. Dodgson Clough Spring, Township Ovendon.	1.8
8. Thwaites Quarry Water, Township Southowram.	11.4
9. Cat Fold Dropping Well, Bottom of Halifax.	12.2
10. Wheatley Long Well Spring, Township Ovendon	3.6

(Signed)

L. PLAYFAIR.

The sources are at a sufficient altitude to admit a supply by gravitation, and thus to enable the Local Board to dispense with engine-power, whilst the vicinage is particularly well suited for the formation of store reservoirs. From the reservoirs, earthen impermeable pipes may be laid, or in the event of a stone conduit being found more economical, the latter may be adopted (as the district abounds with a stone peculiarly suited for the purpose). The conduit-pipe will lead the water to a point in the boundary of the borough on the summit, and so as to command the highest houses, where it will be connected with the street-mains and service-pipes, in diameter varying from 12 inches down to three-quarters of an inch.

The prices at present paid for a very limited supply of water, either in coin or its equivalent, "time," varies from $4\frac{1}{2}d.$ to $12s. 10\frac{1}{2}d.$ (p. 14).

At Nottingham, Carlisle, and other towns, where the water is raised (pumped) by engine-power, the works being in the hands of private joint-stock companies, with whom a primary condition is "dividend," the charges to cottages is $1s. 3d.$ per quarter, or a little more than $1d.$ per week. The limit fixed by the Legislature being $2d.$, but it is estimated a supply may be carried into every house of a similar class for or about one-third of the lowest amount at present paid.

REMOVAL OF FLUID, SEMI-FLUID, AND SOLID REFUSE. — Seeing, from a wide experience, that accumulations (however small) of matter subject to putrefaction, do, on the instant of its taking place, inevitably impart to the surrounding strata and atmosphere its poisonous influence, and, to the extent it takes place, converting a disinfectant into an infectant, there is the greatest necessity for adopting immediate measures for the entire and rapid removal of all refuse, animal and vegetable, at least before putrefaction commences. Its detention in any form, whether in open pits, closed vessels, or by the earth or ground forming the

seat of the town, is incompatible with health, or in the words and object of the Act, "the improvement of the public health."

Water constitutes the cheapest and most efficient locomotive for all semi-fluids and solids susceptible of being held in suspension; hence the absolute necessity for conduits. These are of two classes, and designated house-drains and sewers, the latter being the recipients of the former, and for conveying the sewage beyond the limits of the town to outfalls, from whence it should be appropriated to agricultural purposes.

There cannot be a greater mistake than to suppose efficiency can be given to house drainage and sewerage, in the absence of a supply of water, or that sewers are necessarily required of a calibre sufficiently large for men to enter and traverse; a fallacy to which men otherwise eminent in their profession have most unaccountably fallen into by giving them the sanction of their names.

The discharge of not merely water through pipes of small diameter, but of sewage, has been amply tested; and in addition to the fact that tubes of small dimensions are adequate for the carrying off sewage, we have this additional fact, that by securing a quick and continuous discharge, noxious gases are prevented, of which disastrous effects are upon record, no less than the loss of life, and consequently the justly-dreaded escapes from gully-holes (*grids*) are no longer to be apprehended, from a properly devised system of sewerage and house-drains.

Had there been a plan of the town, as suggested in the early part of the present year by Mr. Beaumont, it would have been an easy matter to lay down the lines, indicative of the position for the several sewers, for the guidance of the Local Board; but no such plan exists, consequently I am unable to do more than give the sections applicable.

The general configuration of the district is particularly well adapted for a rapid discharge of the fluid refuse, and in numerous cases the method of back drainage, after the system introduced by Mr. Austin, in pursuance of the principle deduced by the investigations of the Metropolitan Sanitary Commission (and successfully carried out in many parts of the metropolis and elsewhere), may be applied, and if done upon a combined system, secure to proprietors of houses a saving of *four-fifths* of the cost attending the separate system of house-drainage, with barrel-drains, and a further saving of *three-fourths* of the time of discharge.

In the present case all the sewers and house-drains may be constructed with impermeable earthenware pipes. The sizes for house-drains should, in no case, exceed four inches internal diameter, and the maximum size, for the outfall or final discharge sewer, will not require pipes greater than 24 inches in diameter, the major part being 3, 8, 12, 14, and up to 18 inches in diameter.

Mr. Rawlinson states, four-inch tubular pipes (internal dia-

meter), including syphon-traps, have been laid complete for 1s. 6d. per yard lineal, or about 13s. per house.

In lieu of existing open or other soil-pits, the area of which, in some instances, I found equal to half of the entire area of the yards, and where privies are, in all other respects, properly situated, it has been shown that a proper soil-pan may be substituted for the additional sum of 20s.; and where no proper privies exist, they may be provided, if executed in numbers, and upon system, including soil-pan and means for flushing with water, at a cost of 3*l.* each; but in order to relieve owners of property from immediate outlay, the Act enables the Local Board to advance the money, or do the work upon a rent-charge, spreading the repayment over a term not exceeding 20 years, and thus reduce the repayment for a complete privy, fitted with soil-pan, &c., and a house-drain, to a little more than $\frac{1}{4}$ d. per week per house.

DISPOSAL OF THE REFUSE.—The fertilizing properties of sewage have been practically tested, and in every instance of its application, the crops have been very greatly augmented in quantity as well as improved in quality.

It is only for the Local Board to effect arrangements with the occupiers of land in the vicinity, allowing the latter to participate by receiving a fair share of the benefits. From a cursory examination of the district, I think it more than probable that the whole of the sewage may be discharged down the valley, sufficiently remote for sanitary purposes, by natural means only, where its value, if tried, will here, as elsewhere, be speedily appreciated. If, however, the Local Board should be so unfortunate as not to succeed in securing this outlet, means may be devised for its distribution in other directions.

WASH-HOUSES AND BATHS.—The importance of providing wash-houses will be duly appreciated when it is considered that the working classes have but a single room (and that room only about 13 feet by 14 feet), in which they sit, keep and cook their food, supplies of water, sleep, and perform the weekly wash, and, in wet weather, dry their clothes. During the process the air will be invariably found too moist to admit of the skin performing its proper functions; ceasing to act as an evaporating surface by becoming an absorbent; by which means it has been demonstrated that noxious miasma or poison may be readily carried into the system by the skin and lungs, and finally, conveyed into the blood.

In the laundry department at St. Martin's-in-the-Fields, it is shown that upon an average about $2\frac{1}{2}$ hours suffice for each woman to *wash, dry,* and iron the clothes of herself and family, which formerly used to occupy them the greater part of two days in every week, which is about the time occupied in the district forming the subject of this Report—to say nothing of its being

badly done, at a cost of time and labour. The number of washers, driers, ironers, in 12 weeks, amounted to 3,375 at St. Martin's alone, at a cost of 1*d.* per hour.

The plan hitherto adopted by builders in laying out ground for tenements, to the exclusion of any, even the smallest area, as a yard or outlet of any kind at the back of the solitary room to each tenement, precludes the possibility of securing to each family a separate room for washing—even should there be no unwillingness to incur the expense. It is to the Local Board the working classes must look.

BATHS.—Hitherto the “bath” has been associated in the popular mind with affluence rather than “health,” and not as falling within the reach or even requirement of the working classes. A little consideration, however, will suffice to show that if any difference exists as to the class by whom its use is most required, it will be found the more needful on the part of the latter, than on that of the former class. Experience has shown, that with good arrangements, and upon an efficient management, this great preservative of health may be brought within the means of all. “A warm bath, with a clean towel and attendance, may be furnished for 2*d.*, and yield a profit to the promoters.”

SCAVENGERING AND CLEANSING STREETS, COURTS, YARDS, &c.—The provision made by the council in its bye-laws does not extend to the district of Northowram and Southowram, there being nothing done in the way of scavengering. It was demonstrated by evidence and a personal inspection that accumulations of solid refuse abound, pools of foul water and fæcal matter remain undisturbed, in various parts of undedicated and other roads, a state of things quite incompatible with proper scavengering.

It is, therefore, highly necessary the Local Board should take early measures for preventing a recurrence of the evils, and not merely rely on their removal. In furtherance, uniform surfaces to all roads should be maintained, that the cleansing may be readily and economically done by means of hose and jet; particularly the densely-populated part of the district, where it is most required.

PROBABLE ESTIMATE.—Of the capital required for the entire set of public works for water supply and sewerage:—

	£.
For reservoir, mains, service pipes, land, fences, way-leave, &c.	5,600
Public sewers to outfall for the application of the sewage to its legitimate use	3,350

Assuming the capital taken upon loan for a period of 30 years, repayable by equal instalments of principal and interest at 5 per cent., the average annual instalments for works of water supply and sewerage will amount to 540*l.* 4*s.*, exclusive of the working expenses; whilst it appears from the return that the present

outlay for a limited supply of impure water alone amounts to 463*l.* 6*s.* 10*d.* per annum.

RECAPITULATION AND CONCLUSIONS.—The evidence adduced by the various gentlemen and owners of property, concurrent with the information given by the industrial classes, in more than 45 different streets, courts, and places inspected, shows that there is much preventible sickness occasioned by defective structural arrangement of tenements, arising from the absence of all jurisdiction or building regulations.

That the various forms of disease described by Dr. Alexander are caused or aggravated, if not propagated, by atmospheric impurities, produced by decomposing animal and vegetable substances, by damp and filth, and overcrowded dwellings.

That the bye-laws to the extent they were established, for the removal of offensive matter, street-cleansing, and preventing accumulations of foul water and other deleterious refuse, have been inoperative.

That for want of adequate powers the authorities have been unable to carry out improvements, or enforce regulations having for their object increased comforts for the industrial classes.

That the sums levied for the highway rates are unequally applied, and the benefits derived are not commensurate with the amount contributed by the inhabitants resident within the borough boundary, to their respective townships.

That the industrial classes are subject to great inconvenience and damage, and risk of life—several having already fallen victims—for want of properly-made roads, and means of lighting.

That the district is comparatively unsewered, no arrangements having been made by proprietors of building-lands, whilst individual purchasers are under no obligation to construct sewers or drains.

That the provisions made in the bye-laws, for the regulation of common lodging-houses, and framed for the governance of the keepers, are found to fail in securing the necessary sanitary improvements.

That for the prevention of the disease occasioned by defective house and street ventilation, and other causes of impurity in the work-rooms, dead walls and ends of streets and courts should be removed, lateral streets opened, and back-to-back houses arranged in future so as to admit of window openings in at least two sides thereof.

That the system of building has led to overcrowding, which is destructive to the morality as well as the health of both sexes.

That the smoke cloud, independently of the waste of fuel and increased consumption of soap, to the extent it deteriorates nature's atmosphere, is injurious to health.

That the inhabitants are great sufferers in health, comforts, and money, from the scarcity of water, the cost for procuring a

few gallons amounting, in some instances, to 12s. 10½*d.*, and in none to less than 4½*d.* in money, or two and three hours' unproductive labour or loss of rest, by rising at 2 P.M. to fetch water, before entering upon their daily work.

That a supply of pure, wholesome water may be secured to the inhabitants, carried into every tenement upon the natural (constant) system of supply, at a reduction of their present expenditure.

That a complete system of sewerage, combined with house-drainage, for the entire removal of all foul water and semi-fluid refuse, may be carried out for the weekly sum of 1*d.* per week, per house, and this amount susceptible of reduction by the application of the liquid refuse to its legitimate purpose.

That all cesspools, middens, and soil-pits, may be abolished, the space occupied devoted to other purposes; and water-closets, with apparatus for cleansing, may be attached to each tenement, combined with drains at back of houses, where the premises admit of back drainage, for a weekly sum of 1*d.*, and this sum, at the option of the owner, with the approval of the Local Board, be charged by way of improved rental.

On a full consideration of the evidence adduced, concurrent with the necessitude of water sewerage to which the industrial classes are at present exposed, the absence of all means for cleansing, lighting, regulating buildings, and further increments thereof, and the unequal distribution of highway rates, and general want of comforts commensurate with the expenditure, I am strongly of opinion that the provisions and powers of the General Highway Act and bye-laws are all inadequate to effect a reduction of sickness and expense contingent thereon, or to secure to the inhabitants, particularly the industrial classes, comforts commensurate with their expenditure, and to the landlords a due preservation of their property from physical deterioration.

WHEREUPON I RECOMMEND—

That the provisions of the Public Health Act, 1848, except section No. 50, in the copies of that Act printed by Her Majesty's printers, should be applied throughout the entire area of those portions of the township of Northowram and Southowram as are within the boundary of the borough of Halifax.

I have the honour to be,

My Lords and Gentlemen,

Your obedient humble servant,

WILLIAM RANGER,

Superintending Inspector.

To the General Board of Health,

§c. §c. §c.

APPENDIX A.—Parts of Halifax Borough District.

Town or District.	Locality and Special Designation of the Water obtained.	Date of Collection, and Description of Weather, when the Water was collected.	Geological Formation of District; and Evidence, showing that the Water may have come from this special Formation.	If drainage water, describe the nature of the soil, the geological nature of the area of drainage, and the crops on the field from which the specimen was obtained.	If Well or Pump-water, state the depth of the Well, the Geological Formation into which it is sunk, and if possible, what Strata or Rocks were passed through in sinking.
Northowram and Southowram Inquiry, Borough of Halifax. W. Yorkshire.	Specimen, No. 1.—“Lower Well.” Spring in Holdsworth, in the Township of Ovenden.	May 25, 1850.—Cloudy with showers. Wind westerly. Barometer 28.7. Thermometer 55°. Shade.	Ovenden is situated on the middle member of the Millstone Grit group. There is little but alternate red gravel and sandstone in this township. The spring rises on the south-east boundary line. The dip coursing in this direction.	The soil is of a light black peaty character, with sand. Meadow and pasture land.	
. . .	No. 2.—“Kahah Steps Well,” Northowram.	Ditto	The stratification of this part of Northowram is similar to that above, its neighbouring township.	As above; with a thin bed of clay here and there.	
. . .	No. 3.—“Hazel Hurst,” Northowram.	Ditto	The stratification of this part of Northowram is similar to its neighbouring township, but on higher ground; the spring rising on the south-east side of a shelving hill.	The soil is of a light black peaty character, but with little or no clay.	
. . .	No. 4.—“Upper Brier,” Northowram.	May 25, 1850.—Cloudy with occasional showers. Wind westerly. Barometer and Thermometer as before.	This part of Northowram is on the upper member of the Millstone grit and shale series. We have here, besides the freestone, alternate shales and loam with bands of coal, and sand beds. Dip south east.	The soil here is of a more argillaceous and arenaceous character. Wheat and corn crops are raised, but meadow land prevails.	
. . .	No. 5.—“Horley Green,” Northowram.	Ditto	This part of Northowram is similar to its neighbouring township; but the sandstone is laminated into shales towards the surface.	The soil is here of a more argillaceous and arenaceous character. Chiefly grass land.	

Town or District.	Locality and Special Designation of the Water obtained.	Date of Collection, and Description of Weather, when the Water was collected.	Geological Formation of District; and Evidence, showing that the Water may have come from this special Formation.	The nature of the soil, the geological nature of the area of drainage, and the crops on the field from which the specimen was obtained.	If Well or Pump-water, state the depth of the Well, the Geological Formation into which it is sunk, and if possible, what Strata or Rocks were passed through in sinking.
.	No. 6.—Victoria Reservoir-water, Halifax (source by shaft and drift-way in Warley township).	May 27, 1850.—Heavy summer showers. Barometer 29.3. Thermometer 57°. Shade.	Beneath the Millstone Grit Rock, porous rag-stone, and gravel. Dip south-east south.	A moor-land soil of a peaty silicious character.	30 feet deep, being the drainage of the entire quarry of fine grit-stone, surmounted by slate.
.	No. 7.—“Dodgson Clough” Spring, Ovenden.	Ditto	Ditto	Ditto.	
.	No. 8.—“Thwaite’s Quarry Water,” Southowram.	Ditto	Beneath the flagstone and free-stone, and above the coal. Dip south-east.	A mixed argillaceous and arenaceous soil.	
.	No. 9.—“Cat Fold, “Dropping Well,” Spring in Halifax.	Ditto	Halifax I consider to be on the middle member of the Millstone Grit series. The town lies on a bed of red silicious gravel overlying a bed of grit.	This spring rises immediately beneath the red gravel. It is in a densely-populated part of the town, and lies at the foot of the <i>parish church-yard</i> . The dip of the bearing-level of this spring is from the grave-yard to the well.	
.	No. 10.—“Long Well,” in Ovenden.	May 28, 1850.—Weather fine, with sunshine and flying clouds. Barometer 29.6. Thermometer 59°. Shade.	Ovenden much resembles the above in stratification and soil. It presents several out-crops of grit (pebbly).	This spring rises beneath a bed of gravel on the rock sloping the hill, south. It is an abundant flow of water, and supplies three or four mill-dams.	

Halifax, 28th May 1850.

W. A. ALEXANDER, M.D.

APPENDIX B.

EXTRACT FROM THE AWARD DEFINING THE BOUNDARY.

“ And we further will, grant, and declare, that the said borough shall be divided into six wards, to be respectively called Saint John’s Ward, Market Ward, Trinity Ward, North West Ward, Saint James’s Ward, and North Ward, and that the said wards shall be bounded and described as follows (that is to say):—

“ Saint John’s Ward shall commence at the boundary line of the borough, separating Northowram and Southowram at Clark Bridge, to proceed thence by Clark Bridge, along Bridge-street, including the south sides thereof, thence up Cripplegate, King-street, and Woolshops, including the south sides thereof, thence along Market-street and Union-street, including the east sides thereof; thence down the New Road, including the north-east thereof: thence down Lilly-lane, including the north side thereof to the bridge connecting the townships of Halifax and Southowram, including the whole of that part of the township of Southowram which is within the borough of Halifax, as the same was settled and described in Schedule (O) to an Act passed in the session of Parliament of the second and third years of the reign of His said late Majesty William the Fourth, intituled, ‘ An Act to settle and describe the division of counties and the limits of cities and boroughs in England and Wales in so far as respects the election of members to serve in Parliament.’ In which ward are comprised all the streets, lanes, passages, and places lying within the aforesaid bounds and description.

“ Market ward shall commence at the bridge at the bottom of Lilly-lane, connecting the townships of Halifax and Southowram, to proceed thence up Lilly-lane, including the south side thereof, and along the New Road, including the south-west side thereof, Union-street, Market-street, and the top of Woolshops, including the west side thereof, thence up and including the south sides of the old market, Crown-street, and Silver-street, thence along and including the east sides of Bull Green, Barum Top, Harrison Road, and Well Head-lane, to the boundary line of the borough. Thence in a straight line along the boundary of the said borough, in an easterly direction to Hebble Brook, thence along the course of the said brook, including the west side thereof, to the aforesaid bridge at the bottom of Lilly-lane; in which ward are comprised all the streets, lanes, passages, and places lying within the aforesaid bounds and description.

“ Trinity ward shall commence at the boundary line of the borough, at the end of Well Head-lane, to proceed thence along and including the west sides of Well Head-lane, Harrison-road, Barum Top, and the top of Silver-street, thence up Lister-lane to the top of Hopwood-lane, including the south sides thereof; thence along the boundary line of the borough, as settled and described by the last-mentioned Act, in a south and south-easterly direction to the point first described in the commencement of this ward; in which ward are comprised the streets, lanes, passages, and places lying within the aforesaid bounds and description.

“ North West Ward shall be and commence at the boundary line of the borough at the top of Hopwood-lane, thence to proceed down and including the north sides of Hopwood-lane and Lister-lane; thence along and including the west sides of Cow Green, top of Swine market, Saint James’s-road, Stanary, Stanary-lane, to Lee Bridge, the boundary line of the borough, thence along the boundary line of the borough, as settled and described by the last mentioned Act, in a westerly and southerly direction to the point first described at the commencement of this ward; in which ward are comprised all the streets, lanes, passages, and places lying within the aforesaid bounds and description.

“ St. James’s Ward shall be and commence at the boundary line of the

borough at Lee Bridge, to proceed thence up and including the east sides of Stanary-lane, Stanary-street, James's-road, top of Swine Market, and Cow Green, thence along and including the north sides of Silver-street, Crown-street, Old Market, Woolshops, King-street, Cripplegate, Bridge-street, to Clark Bridge, thence along the course of Hebble Brook, including the south-west side thereof to the point first described at the measurement of this ward; in which ward are comprised all the streets, lanes, passages, and places, lying within the aforesaid bounds and description.

“ North Ward shall be and consist of the whole of that part of the township of Northowram which is comprised within the Parliamentary borough of Halifax, as the same was settled and described in Schedule (O) to the said last-mentioned Act; in which ward are comprised all the streets, lanes, passages, and places lying within the aforesaid bounds and descriptions.

“ And each of the said three first-mentioned wards (that is to say) Saint John's Ward, Market Ward, and Trinity Ward, shall respectively return six councillors; and North West Ward shall return three councillors; and Saint James's Ward shall return six councillors; and North Ward shall return three councillors.

“ And we further will, grant, and declare that our trusty and well-beloved Michael Stocks, Esquire, do, on the third day of April, in the present year, make out an alphabetical list (to be called the Burgess list) of all persons who shall possess the title and qualification required by the said Act of Burgesses of the said borough of Halifax as aforesaid; and shall cause a copy of such burgess list to be fixed on or near the door of the County Court House, or in some public and conspicuous situation within the said borough during eight days before the fourteenth day of April in the present year, and that every person so possessed of such title and qualification as aforesaid, whose name shall have been omitted in such burgess list, and who shall claim to have his name inserted therein, on or before the said fourteenth day of April in the present year, give notice thereof to the said Michael Stocks, in writing, and shall in such notice describe the house, warehouse, counting-house, or shop, then occupied by him the said claimant in the said borough of Halifax, and state the township or townships in the said borough of Halifax, in which he the said claimant has been rated, and the time during which he has been rated in each of them within the said borough necessary for his qualification, and also the place of abode of him the said claimant, and that every person whose name shall have been inserted in such burgess list, may object to any other person as not being entitled to have his name retained in the said burgess list, and every person so objecting shall, on or before the day and year last aforesaid, give to the said Michael Stocks, and also give to the person so objected to, or leave on the premises for which he shall appear to be rated in such burgess list, notice thereof in writing, which said notice shall specify the name of such person so objected to, and describe him as he is described in the burgess list, and shall also specify the name of such objection, and state his place of abode, and the property for which he is said to be rated in the said burgess list. And the said Michael Stocks shall include the names of all persons so claiming to be inserted in the said burgess list in a list, and shall also include the names of all persons so objected to as not entitled to be retained on the said burgess list in a list, and shall cause copies of such several lists to be fixed in some public and conspicuous situation within the said borough during eight days before the twenty-fifth day of April in this present year. And we do hereby appoint our trusty and well-beloved Frederick Thompson, Esquire, barrister at law, and Robert Eastwood, Esquire, barrister at law, or either of them, to revise the said burgess list, as well as the list of claimants and objections on the twenty-fifth day of April in the present year, in the manner directed in the said Act for the regulations of municipal corporations in England and Wales, or in any Act passed to alter, amend, or enlarge the same.

“ And we do hereby direct the said Michael Stocks to copy the said burghess list of claims and objections so revised as aforesaid, into one general alphabetical list, in a book, with every name therein numbered, beginning the numbers from the first name, and continuing them in a regular series to the last name, and shall cause such book to be completed on or before the first day of May in the present year; and such book shall be the burghess roll of the burghesses of such borough entitled to vote in the choice of the councillors, assessors, and auditors of the said borough, at any election or elections which may take place in such borough before the first day of November in the present year.

“ And we further will grant and declare that the first election of the mayor, aldermen, and councillors for the said borough shall be respectively holden as follows (that is to say):—That the first election of councillors for the said borough shall be holden on the twentieth day of May in this present year; and that the aldermen of the said borough shall be elected and assigned to their respective wards on the thirty-first day of May in this present year, and that the mayor of the said borough shall be elected from out of the said aldermen or councillors on the thirty-first day of May in this present year.

“ And that the first election of auditors and assessors for the said borough shall take place on the 1st day of July in this present year.

“ And we do hereby appoint our trusty and well-beloved John Herbert Mitchell, Esquire, to act as returning officer at such first election of councillors of the said borough, and at any subsequent election of a councillor or councillors of the said borough, which shall take place on account of any vacancy occurring among the said mayor, aldermen, and burghesses, or otherwise, previous to the 1st day of July in this present year, with the same powers as by the Act for the regulation of municipal corporations of England and Wales, are given to the mayors and assessors at election of councillors for the boroughs in the said Act enumerated.

“ In witness whereof we have caused these our letters to be made patent. Witness ourself at our palace at Westminster, this twenty-second day of March, in the eleventh year of our reign.

“ EDMUNDS.

“ By writ of privy seal.”